

DIGITAL VIRTUES

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Reflections, frameworks and practical matters for Institutes of
Consecrated Life and their members

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1 Why 'digital virtues' ?

1.1 Introduction

It is mid-June 2007 as I write this introduction and the newspapers and TV news are quite taken with a new set of '10 Commandments for drivers', provided by the Pontifical Council for Pastoral Care of Migrants and Itinerant Peoples, and supposedly to be made available for Bishops Conferences to promote. The world's attention has been caught by a new set of 'thou must' statements!

Commandments, mysteries of the Rosary, lists of deadly sins (seven) and contrary virtues (also seven) are part of humankind's, and the Church's penchant for helpful frameworks. They are all educational devices, come to think of it. The Church has always taken its responsibility for education seriously. Simple explanations of the *Credo*, *Pater* and *Ave* were not enough. Clergy and laity alike wanted to know how to do good and avoid evil in concrete terms. The virtues and vices were not a new idea, and they were independent of the Christian Church, but they became, for the Church, a very important idea in an educational context, a kind of practical theology.

I have long felt that we need a framework to help us through one of the world-changing revolutions of our time, the digital revolution. I did not want to write a set of ten commandments, I have to admit that seemed too pretentious. Nor did I want to start out by listing however many 'sins' might be lurking in this new digital world we are adjusting to. That seemed too negative an approach. But it did seem appropriate to encourage some virtues, some ways of dealing properly with the digital world that we have to deal with anyway.

1.1.1 The audience

My experience of matters digital has taken place within the context of being a member of consecrated life, a Religious, a Salesian of Don Bosco. Salesians are educators, and we see a natural need for frameworks, 'scaffolding' might be the current educational term, to help make sense of certain experiences and learn from them. My experience and firm belief is that the 'digital' in today's life is no longer a range of individual things, anything from digital clocks to cellphones to computers to....., but a culture, something which calls upon habits or inculcates habits. That is when I began to think about virtues as a possible framework, because virtues are special kinds of habits. When we work at a keyboard, or do a whole range of things that today are accomplished in digital ways (using software and hardware), the chances are that we are developing habits. These may or may not be good ones; it helps to reflect on what we do to determine the value of such habits. That is what this series of essays is all about.

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I address myself in the first instance to fellow members of consecrated life in all its forms. While I do not expect that there has to be a great deal of technical knowledge, I do expect that readers are open to learning what they really need to learn to use the instruments wisely and effectively - and efficiently. In religious life we talk a lot about 'ongoing formation'. That is how I see these essays. Occasionally I may stretch people's limits a little, but at times we need to do that or have it done for us.

Having said that, this is not a practical manual of digital matters, though I have appended to the end of each chapter a list of practical things to do or reflect upon, and a number of statements or questions are repeated as margin notes, where I consider that they deserve drawing attention to in this way. I am inviting individuals and communities to reflect on their habits in this area, possibly realising for the first time that there are habits involved - word processing for instance. Maybe, as you read this, you begin to see for the first time that it is a habitual practice and as such deserves thinking about. You will see that I question the way the majority of us go about word processing 6.5.1.

1.2 The seven virtues

In early Christian times, seven holy virtues were proposed as antidotes to the better known seven deadly sins. A Roman poet is credited with the effort.¹ In the Middle Ages, the poem was taken up again and did much to promote the notion of a virtuous life. While efforts have been made to thoroughly theologise both vices and virtues, it is hard to escape the fact that virtue (and vice for that matter) was under discussion in heathen Greece long before Christianity. Given the normal way of etymology, words can end up with vastly different meanings than their original over time.

'Virtus' is a case in point. If we stick with Latin, we immediately know its masculine origins (*vir*=man) and a little reading of history or philosophy will elicit the fact that it referred to a man's courage on the battlefield. Etymology will have its way, however, and by the Middle Ages 'virtus', by now 'virtue' in English, had come to refer mainly to a woman's chastity. There should be no surprise, then, to see the word continue its path away from, well, valour or virtue as we have known them, to mean at least in colloquial English, 'almost' or 'not quite': "it's virtually lost the plot", we could say! Or alter the word slightly to another form, 'virtual' and it has now come to mean 'another reality'.

I am choosing to steer it back a little - not so much in the direction of classical virtues be they cardinal or theological, but towards little virtues of today's digital world. Should there be seven of them? Who knows. It is a handy number with certain classical echoes!

You will sense some variation in the style of the essays that make up this collection. I call them 'essays', since a number of them were prepared for one or other group, sometimes a group directly involved in advising on or working with digital information, and occasionally a group that had little or no experience other than that of being 'consumers' of such information. The first and more philosophical reflection went that way because I wanted to establish a solid enough platform to be making some precise suggestions about how we as Religious might become not only more aware of the digital approaches we are

*Taking
sensible
steps to
ensure our
digital
approaches
are more
consonant
with what
we profess.*

¹Aurelius Clemens Prudentius, in his *Psychomachia*, or *Contest of the Soul* (c. 410)

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involved in, since in today's world it would be hard to be a Religious and not be involved in digital matters, but also how we could be taking sensible steps to ensure these digital approaches are more consonant with what we profess. The seven 'digital virtues' wind their way in and out of the practical and the theoretical. Only time, further reflection and experience and contribution from others will give the essays a little more consistency as a group.

1.3 Digital discourse and Virtual Reality

I am not sure how much people know about the activity of the linguist, or even what they might believe this has to do with the topic at hand - some think a linguist is a person who speaks many languages. If that be the case, I am not a linguist. I manage English with an Australian accent, survive in Italian, can read and speak haltingly in Spanish, can follow a conversation in Fijian but not respond too easily, can read French, some German, and can say 'Shalom' and 'Salaam' in Semitic languages but little else.

Some people think linguists are interested in the background to words - well, probably most speakers of most languages are linguists in that sense, and etymology, which is what we are talking about there, is certainly a part of any linguistic understanding, but it is not linguistics as such.

Instead, linguistics and in this case linguists, are interested in a range of levels of language starting from the individual sounds we make (called phonology), right up to a level that many people haven't even considered very much at all - the level of discourse. A word is far more than the sum of its parts in fact, and 'keeps company' with other words. If it keeps company long enough and actively enough it creates a whole discourse.

The series of essays that follows constantly links two words - 'virtue' and 'digital'. I do this with two backgrounds, if you like. One is my background as a linguist (in the sense described in this paragraph, and with a training in sociolinguistics in particular), and the other is as a Salesian Religious, a member of an institute of consecrated life with a specific charism and mission which includes communication as one of its apostolic priorities. I have no specific training in matters digital, just a lot of practical and hard won experience. Weaving together these different strands of experience and being is what these essays are all about. I want to create a discourse which may be useful for members of consecrated life.

But what does it mean 'to create a discourse'?

1.3.1 Digital

Let me go back to a 1960's film - 1967 in fact: *The Graduate*. Here is a snatch of conversation from that film:

"I want to say one word to you. Just one word."

"Yes, sir."

"Are you listening?"

"Yes, I am."

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"Plastics."

In 1967 the word 'plastics' was meant to invoke modernity. Today it refers to an established industry, one that spans everything from the grocery bag to the portals on the space shuttle. And like 'plastics' was in 1967, so 'digital' is today. A term which invokes many things. It is a kind of genus term for all those things composed of ones and zeros (or even just fingers and toes), much in the same way that 'mammal' means warm-blooded and suckling its young.

It is not that everybody easily understands what this term means. Recall a year or so ago when Google announced it wanted to digitise every book in the world, or at least as many as it could get hold of legally. People react in various ways to that proposal and you immediately see that they have different expectations of what 'digitising' a book might mean. Some might argue that a digitised book is not easy to read, others might say it is not thereby conserved for the long-term. Yet others, enthusiastic about the proposal, say that Google wants to create a universal digital library. In reality, Google is a search engine - it wants to index the books. Other things might be a spin-off from that basic idea.

Saying, then, that you want to digitise an item is as vague as saying you want to buy someone a mammal for his birthday. What if that is a Bengal tiger instead of a friendly puppy? So my use of the term 'digital' needs to be specified.²

1.3.2 Discourse

As a linguist, and in terms of academic discussion, I have long been interested in discourse, which is the upper level of all those levels which make up human language. When I was teaching in Fiji some years ago, teaching young Fijians in Teachers College about teaching, one of the things that struck me as really odd was that by Government policy, even though the children naturally spoke Fijian, or even Fiji Hindi as mother tongue, teachers were required to teach in English. That had two effects as far as I could see. One was unhappy children, who got around the decree by talking Fijian or Fiji Hindi in the yard, where such a rule could not be enforced. If you want peace in a country, then at least invite linguists to offer some points of view about language policies, is what I would say at one level! But the other effect was that those I was teaching to teach thought they spoke English and would be teaching in that language - in fact they were speaking a variety of English which many people in the country looked down upon. As a linguist I was interested in telling them that the kind of English they were speaking was good in itself, a distinctive variety to be proud of. And it was particularly at the discourse level that they betrayed their Fijian or proto-oceanic origins at every step. One could teach them that the sentence 'one of my brother is sick' is not standard British or Australian or American English, but that made no difference. Proto-oceanic grammar, and that goes back thousands of years, determines that 'one of my brother' is the way

²Karen Coyle, 'One Word: Digital', Published in *The Journal of Academic Librarianship*, v. 32, n. 2, March, 2006, pp. 205-207.

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to say it, and that's that! That's the way Fijian discourse works and that's the way Fiji English will work until global warming wipes out some of those islands one day.

Discourse is powerful. It works without our realising it. The linguist can tell you many things about how it works at the level of language. The social scientist or sociologist can also tell you about it. Discourse is a kind of institutionalised language. Not every idea or concept reaches this stage, but I believe we can say that the area known as 'virtual', 'digital', has reached that stage.

1.3.3 Virtual reality - an example of a successful item of discourse

Time, I think, that I gave you a practical example of this. I think we can locate the beginning of the term 'virtual reality' as June 7th, 1989, when a Computer Assisted Design Software Company teamed up with another company called VPL and touted their new software called *Autodesk*. At the VPL Texpo '89, they put it this way:

Virtual Reality is shared and objectively present like the physical world, composable like a work of art, and as unlimited and harmless as a dream. When virtual reality becomes widely available [remember, this is 1989] around the turn of the century, it will not be seen as a medium used within physical reality but rather as an additional reality. Virtual reality opens up a new continent of ideas and possibilities.

Any technology with the audacity and hubris to call itself reality is actually a paradigm shift.

Do you note the appeal to a whole range of well-established discourses here? This was the very first occasion when virtual reality was being presented to the world, yet it appeals to the established discourses of art, psychology, philosophy, discovery, colonisation, frontier. Indeed, I would say that virtual reality set about colonising these discourses, and has done so very successfully in the space of 20 years. Despite being a computer-based technology, as a discourse it has been quite Promethean in approach. Any technology with the audacity and hubris to call itself 'reality' is actually a paradigm shift.

Anyone old enough to remember Cinerama will recall it was interesting but it never quite took off. Yet from the 1980s, virtual reality took off, and it moved itself from a decidedly marginal, even marginalised concept to something mainstream and institutional. Cinerama came and went. Virtual reality stayed. Let's try and follow that path a little.

In 1984, a novel called *Neuromancer*³ introduced the world to the term 'cyberspace'. It was a Sci-Fi novel though not a really pleasant one. Perhaps even more than science fiction, it was really a form of social criticism of the alienation brought about by modern day society. Virtual reality hadn't yet been invented (the term) but you can see its marginal beginnings in this kind of thing. By 1992 the term had been picked up and found itself as the title of a book and a film, *Virtual Reality*.⁴ He describes the phenomenon - in fact makes the point that though we might be social creatures, we really need to become community creatures, and virtual experience can be part of that. Then in the

Virtual reality has colonised the discourses of entertainment, technology, social science and even science itself.

³Howard Rheingold. <http://www.rheingold.com/vc/book/intro.html>

⁴*The Lawnmower Man* is a 1992 film which uses elements from Stephen King's short story "The Lawnmower Man".

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film *Lawnmower Man* the concept was immortalised. At the same time the military was moving ahead with aircraft and weapons guidance technology by now employing this term. At another level altogether, a kind of cyberpunk element was also out there, developing its discourse on virtual reality as a kind of electronic LSD with the full backing of none other than Timothy Leary!

Now, all the time there was the computer in the background, and the explosion of the Internet from about the late 1980's onwards. I know this in very practical ways because that's when I put together a website almost, if I can use the analogy, like the way a pilot flew his Tiger Moth in the 1950's, flying by the seat of his pants. There was no *MS Frontpage* or *Dreamweaver* at that stage to build websites with. You learnt the 'language' and just did it.

Marshal McLuhan's famous term 'the medium is the message' was a powerful piece of discourse in its own right - it altered our thinking about the computer from being a tool to being a medium. Virtual reality built on that. Perhaps not like some organised project, but it built on it just the same. Virtual reality since then has colonised the discourses of entertainment, technology, social science and even science itself.

The 'global village' has by now been reincarnated as 'cyberspace' (cyberia?), a technologically built virtual reality, which foresees the conversion of all analog data to digital data, and which sees itself as a new space for liberation and universal understanding.

1.4 But is it all true?

As a linguist I believe that virtual reality has created a true and powerful discourse which we cannot deny. It is around to stay and it has begun keeping company with all kinds of areas. But of course, not all human experience can be digitised, nor can it be virtualised. One of the questions I have in mind, given what I have just written, is to what extent virtual reality has also begun to colonise the discourse of religious life!

Two specialists in the virtual field G.S. Jones,⁵ and S. Aukstakalnis-D. Blatner,⁶ suggest that if we want to really understand virtual reality, it is important to appreciate how we perceive the daily reality surrounding us... perhaps the greatest service that virtual reality can give to today's culture is the recovery of reality.

⁵ *Virtual culture: Identity & Communication in cyberspace*, London, Sage, 1997

⁶ *Silicon mirage. The art and science of virtual reality*, Berkeley [CA, Peachpit Press, 1992)

2 Digital Detachment

But if you are really poor, dear Philothea, be likewise, for God's sake, actually poor in spirit; make a virtue of necessity and value this precious jewel of poverty at the high rate it deserves.
(Francis de Sales, Ch. 16 para 1.
Introduction to the Devout Life)

2.1 FOSS - Free, Open Source Software 8.2.2

This chapter is an introduction to the area of Free/Open Source Software (FOSS), aimed at arriving at some practical institutional directions in the context of Religious Life. It takes up some of the ethical issues but also explains basic terminology and some technical aspects essential to understanding what the implications of FOSS are or could be, for a Religious Congregation. It lays no claim to completeness and is to be seen as a stimulus to discussion. The author is open to correction on anything he claims to be true! The entire discussion is carried out in the framework of a traditional spiritual 'virtue' in the thinking of St Francis de Sales - detachment. This is not accidental, but meant to give FOSS a special place in the Church's and Salesian (in the wider sense of that term) mission. Indeed, in this respect, 'Salesian' refers not to one or other branch of consecrated life but to all who wish to take the Christian vocation seriously in the way Francis de Sales advised many of his lay readers or correspondents to do it. Nevertheless the essay is written by a Salesian of Don Bosco, a Congregation with its already well-elaborated 'Salesian Social Communication System', a theoretical framework for action in communications within the institution, so the paper draws directly on the experience of this group. It explores 'detachment' as a small virtue with practical implications in dealing with today's software - avoiding 'bloat', changing our way of working, not being too attached to even the fruits of one's labours! If all this is too high a claim it is also open to vigorous discussion.

I wish to make it clear from the outset that what I say about Free, Open Source Software¹ is not coming from mere fascination with the digital world, 'geekiness', or because

¹The term 'Free, Open Source Software' is disputed inasmuch as someone like Richard Stallman, the founder of the Free Software Movement, argues we really should simply talk about free software (free=libre, not cost free) and drop the 'Open Source' reference. This approach highlights the ethical reasons rather than the economic reasons for adopting this approach. In fact Stallman says: 'While free software by any other name would give you the same freedom, it makes a big difference which name we use: different words convey different ideas. In 1998, some of the people in the free software

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I hate Microsoft, which I don't! Instead, it emanates from motivations which I believe a Religious should be bringing to whatever means he or she uses for evangelisation. Also, from the outset, I declare myself as a Salesian of Don Bosco, not for any motive of singularity, but because this group has 'communications' as one of the charismatic priorities of its mission, especially to the young and to ordinary folk, and has a well-developed theoretical framework called the *Salesian Social Communication System*² which, apart from being a document for the Salesian Society, would sit just as well in any institution concerned with overall coordination of its communication activity. At the moment, however, this 'system' does not explicitly recognise FOSS, and one of my purposes in writing this is to help the Congregation reflect on the possibility that it might be more explicit about this.

My thinking about these issues is not something that started yesterday. If I describe it as a 'conversion' you may begin to appreciate that at the very least it has happened over time, without attaching too much of a religious notion to 'conversion' as I use it here. When the Superior General of the Salesians of Don Bosco, Fr Pascual Chávez, wrote his significant Letter (*Acts of the General Council* 390, 2005) on the implications of modern technology for the mission, he was not starting from scratch, that is, he did not have a tabula rasa - the Social Communication Department of the Salesians of Don Bosco had been doing some of this thinking too and he was aware of that; he had also done reading of his own, but what I found most enlightening was the way he began to model a process for us; he took whatever ideas he was offered, but then made his own reflection, asking how all this affects our evangelisation. He did a little more than that, even. He had clearly 'bounced' these ideas off others and gained a deeper appreciation of some of the issues in the process. In the end he was interested not simply in general recommendations but in urging his readers to apply these, as well as the fruits of their own reflection, in daily life.

I felt that I personally had a duty to do similarly - to use my own experience and practical knowledge, but also to ask some serious questions. It finally fell into place during a Retreat in Annecy based on St Francis de Sales. Certain things about the man's, the saint's approach to the challenges of his own age and place touched me deeply at that point. So, do not be in the least surprised that I have chosen 'digital detachment' as a title, nor that I have tied this immediately to one of Francis de Sales' insights as he writes in his Introduction to the *Devout Life* of the need for an interior, spiritual poverty.

community began using the term "Open Source software" instead of "free software" to describe what they do. The term Open Source quickly became associated with a different approach, a different philosophy, different values, and even a different criterion for which licenses are acceptable. The Free Software movement and the Open Source movement are today separate movements with different views and goals, although we can and do work together on some practical projects. The fundamental difference between the two movements is in their values, their ways of looking at the world. For the Open Source movement, the issue of whether software should be Open Source is a practical question, not an ethical one. As one person put it, 'Open Source is a development methodology; free software is a social movement'. For the Open Source movement, non-free software is a suboptimal solution. For the Free Software movement, non-free software is a social problem and free software is the solution'.

²Editrice SDB, Edizione extra commerciale, Direzione Generale Opere Don Bosco, Via della Pisana 1111-100163 Roma-Bravetta (2005)

2 Digital Detachment

He wasn't thinking of computers and software; not in 17th century Annecy, but he might have been if he was in 21st century Annecy - why, even the *Vieille Ville* has its own Internet café!

The 'detachment' of which I speak has both a traditional and an entirely new application. The new application is a literal detachment of content and form, and while in no sense a religious idea, does offer ways of working that are more sensible, more open to important human if not religious values. I'll come to that eventually. The traditional understanding is that of detachment from things - and my use of it here is a reaction to a situation where we have, I believe, become too dependent on certain things, those things being a particular brand of software, or ways of doing things with software.

I guess, in the end, I am proposing the cultivation of a series of 'little virtues' in the way we choose software, the way we use it, and the way we help shape the textual community around the message we proclaim. What I have in mind is not a revolution - just a sensible, alternative way of going about things for very good, even profound, reasons.

Before we get too heavy, may I introduce a lighter note? Tying the digital world to the religious world is not exactly something new. Let's go back to 1994 and a delightful essay by Umberto Eco when he was a columnist for the weekly *Espresso*. Remember though it is 1994!

We have become too dependent on certain things - those things being a particular brand of software, or ways of doing things with software.

The fact is that the world is divided between users of the Macintosh computer and users of MS-DOS compatible computers. I am firmly of the opinion that the Macintosh is Catholic and that DOS is Protestant. Indeed, the Macintosh is counter reformist and has been influenced by the "ratio studiorum" of the Jesuits. It is cheerful, friendly, conciliatory, it tells the faithful how they must proceed step by step to reach - if not the Kingdom of Heaven - the moment in which their document is printed. It is catechistic: the essence of revelation is dealt with via simple formulae and sumptuous icons. Everyone has a right to salvation.

DOS is Protestant, or even Calvinistic. It allows free interpretation of scripture, demands difficult personal decisions, imposes a subtle hermeneutics upon the user, and takes for granted the idea that not all can reach salvation. To make the system work you need to interpret the program yourself: a long way from the baroque community of revelers, the user is closed within the loneliness of his own inner torment.

You may object that, with the passage to Windows, the DOS universe has come to resemble more closely the counter reformist tolerance of the Macintosh. It's true: Windows represents an Anglican-style schism, big ceremonies in the cathedral, but there is always the possibility of a return to DOS to change things in accordance with bizarre decisions.....

And machine code, which lies beneath both systems (or environments, if you prefer)? Ah, that is to do with the Old Testament, and is Talmudic and

cabalistic.³

If Umberto Eco had that to say in 1994, when he would have had not the faintest notion of the existence of free, Open Source software, what would he say of FOSS today? By now we've moved from the 'cathedral' to the 'bazaar'!⁴ At the very least he would have to call the movement agnostic!

2.2 FOSS - a context for expressing and understanding values

Our digital world is today's context - or one quite important context - for evangelisation. We know from Paul VI's *Evangelii Nuntiandi* that there are two forms of evangelisation needed: of the individual and of culture. While the first may apply here in some way, it is not that which I have thought about so much. But the second, yes - evangelising culture. Software is part of our culture today and helps create that culture. Fr Chávez put it neatly enough: 'Open Source is a way of moving towards the democratisation of information and culture'. I could also put it this way: when you evangelise a culture you seek to evaluate and possibly change the judgements and values of that culture. It is this which I am seeking to do here, seeking 'to affect and, as it were, recast the criteria of judgement, the standard of values, the incentives and life standards of the human race which are inconsistent with the Word of God and the plan of salvation'. (EN no. 19). I might add that if Open Source is a way of moving towards democratisation of information and culture, then other ways, for example proprietary ways, just might be moving in the opposite direction, namely privatisation of information and culture. Were that to be true then there would be a serious ethical problem. I think we might be at a turning point in contemporary culture where a lack of awareness of the issues at stake (that is, where we stop at being just consumers of digital development without further reflection) gives those who have other intentions the chance to privatise and control knowledge.

If Open Source is a way of moving towards democratisation of information and culture, then other ways might just be ... privatisation of information and culture.

2.2.1 The value of 'free'. Other values

You find that the reference to 'free' in FOSS is a bit slippery. On the one hand it means 'freedom' and on the other it means 'no cost'. I think both are important. We have to say that the increasing dominance of a handful of big players in the software world (it is a mistake to only concentrate on one of the big players) has determined many individuals' ways of thinking and acting. But we have to talk about Microsoft if we start from the premise that just about any user these days has an Office Suite, and that is more likely than not to be *MSOffice* version 'x'. People are by no means forced to use it, but they do

³back-page column, "La bustina di Minerva," in the *Espresso*, 30 September 1994

⁴'The Cathedral and the Bazaar' (often abbreviated as CatB) is an essay by Eric S. Raymond on software engineering methods, based on his observations of the Linux kernel development process and his experiences managing an Open Source project, *fetchmail*. It was first presented by the author at the Linux Kongress on May 27, 1997 and was published as part of a book of the same name in 1999. It is commonly regarded as a manifesto of the Open Source movement.

2 Digital Detachment

and they don't question how they use it - or are guided to use it. That is an unfreedom, one which can be tested by a reaction. If your first response to using another word processing program (e.g. *OpenOffice Writer* or *Abiword*) is 'But in *MSWord* we do this, yet here I have to do something else - why bother?', then you do not have a degree of detachment or poverty of spirit. You have a certain meanness of spirit instead, I suggest! Why shouldn't it be done differently, so long as it's done and done well? Of course, you may be in another situation - one of ignorance, where you simply did not know that there were any other possibilities! After reading this you will need to determine whether your ignorance is now culpable - be warned!

Why shouldn't it be done differently, so long as it's done and done well?

Let me pose a question: do we ever query what brand of pen our correspondent is using or once used? No, because the format remains the same, namely common and non-proprietary (alphabet and language) and the analogue inscription tool (you know I mean a pen!) is merely incidental to the format. On the other hand, while we might show occasional interest in the brand of computer someone is using, it is not that which we talk about so much, but rather the digital inscription tool (you know I mean software!). Today people now go in for pirating software because that may be the only way to communicate when the formats are proprietary and the user cannot afford to pay.

'Free' is valuable for another reason, of course, and this is closer to poverty as we know it: no cost or very little cost. I believe it is a compelling reason for pushing FOSS. I find myself reacting rather strongly at times in a world where most people have everything they want and for this reason alone cannot be bothered about adopting approaches which don't cost. I've also lived in places where we didn't have everything we wanted - and have appreciated the opportunity of exercising a software option because it does not cost anything, of doing normal things on a computer that other people do, things like word processing or spread sheets or activities associated with the Internet, because at last I can afford it.

There are other values which FOSS encourages: a culture of sharing, technology maximised for everyone, a culture of networking, to name just three. The move towards 'open standards' is also, broadly, a matter of values which I believe to be healthy and open to Gospel interpretation. Open standards include such things as availability - for example web sites that are open to all to read (including the blind!), maximisation of end-user choice, no favouring of one implementation over another, and so on.

Teaching through FOSS actually gives poor students access to precious knowledge and has the potential to open up new employment opportunities for them.

FOSS also encourages a read-write culture and this, I believe, has considerable implications for us today. More on that shortly.

Educators would do well to consider FOSS in the school or instructional setting. Teaching students information technology through proprietary software I sometimes liken to giving them a nice car and a chauffeur, but it teaches them little about what happens underneath the bonnet, does not allow them to develop the software and in many instances leaves them without the chauffeur and the car, and the means to buy them, once they leave school. FOSS, because its source is open, enables them to 'drive' themselves and know something about the engine. They need little by way of resources (the chauffeur) later on to continue with their efforts. In undeveloped or developing countries, on the

premise that information technology there will embrace FOSS,⁵ if it has not already done so, teaching through FOSS actually gives poor students access to precious knowledge and has the potential to open up new employment opportunities for them. It is true that the very best and smartest may still get jobs with certificated knowledge of proprietary software, but with FOSS added in they may do better still, and besides, we should be interested in also helping those who are not the very best nor the very smartest!

It seems to me, then, that we have a duty to cooperate in the Gospel task of shaping the criteria of judgement in human existence in this digital culture in which we live; furthermore we have a duty to help our world (our culture) deepen its understanding of itself. We need to help this world and culture ask important questions. To my knowledge very little has been done in this area. It is for this reason that I have been delighted to see www.eleutheros.it online, to meet its 'co-founder' and deeply committed promoter, Marco Fioretti.⁶ Here is a group taking up the Church's rhetoric in practice and seeking to influence today's digital culture in just the kind of ways I am referring to here. Marco and his companions have dusted off a few of the Church's relevant documents and begun to explore their application to digital culture. For example: 'With the right to be informed goes the duty to seek information. Information does not simply occur; it has to be sought. On the other hand, in order to get it, the man who wants information must have access to the varied means of social communication' (*Communio et Progressio* n. 34). One implication of this, says Marco, is avoiding proprietary file formats and protocols since they tend to restrict in. You could read more of Marco's thinking by going to the eleutheros site and following his articles in Newsforge from there (Newsforge has recently become Linux.com instead). And you might do better still by going to <http://digifreedom.net/node/84> to check out his *The Family Guide to Digital Freedom*.

2.2.2 Abundance does not necessarily bring about better, more thoughtful results 8.7

One of the important questions we need to ask is in relation to the 'bigger and better and more features' approach of the software world in general. In this, software is only emulating many other aspects of our contemporary society. Here I am leaving aside discussion of equipment *per se* and speaking only of software.

We live in a software world of creeping featurism. I do not need to tell anyone with even a minimum of experience that the normal office suite used by the majority of computer users contains an enormous number of features they will never use, may not want to use and certainly may not understand how to use. This bloat, however, seems acceptable today. Surely it should be open to question.

The FOSS community (perhaps the word 'community' is debatable but it is helpful shorthand) is not immune to the same tendency but one does find within it an opposite

⁵It suffices to read up on statistics of FOSS development in certain areas (especially Asia and Africa) to realise this.

⁶Marco Fioretti is now based in Rome but has worked for a number of years in Silicon Valley. He is fluent in English and Italian. Other like-minded laity and clergy have joined with Marco in promoting a study of FOSS in the light of Catholic teaching.

one, to keep things to a minimum (*Damn Small Linux* or *Puppy Linux* are two examples of operating systems along these lines), to provide a 'kernel' to which one can add options. Mozilla's *Firefox* browser and *Thunderbird* email client are good examples of this approach. *Abiword* is an example from the word processing field - small, compact and powerful. I believe this approach (minimum plus options) is a value to be pursued and in keeping with the spirit of 'digital detachment'.

2.3 Software: the missing link in the Church's language!

Since *Inter Mirifica* (Vatican Council II), more Church documentation has appeared on communications, including new technologies, than ever before in the Church's history. What is a surprise, though, is that if you run a search with the word 'software' in it for all these documents, you do not find it! This has to be a significant absence. Software is a minor element for these documents in communications, Internet, ethics, dare I say Church. If it does rate a mention in general discussion, this is purely at an instrumental level, such as the choice of software to account for the Sunday collection! Part of the problem, it seems to me, is this: the Church's language in this area belongs to a read-only culture, and consequently comes from that mindset. It has not yet come to terms with read-write culture. The Church still sees this whole area as uni-directional, as yet another opportunity for the 'professionals' to give moral instruction to passive receivers, instead of offering guidelines for a world where more and more people are using bi-directional media like blogs, Internet, forums. Understanding read-write culture better could lead to an appreciation of the role software is playing in the creation of new culture.

Software has its technical definitions which do not interest us here. Software probably goes back to at least 1804 when a Frenchman, Jaquard, discovered how to make a loom work faster with only one person feeding in a punched card. At this point software was not just of technical interest, but of ethical interest, since the implications for the labour force in the industrial revolution were so staggering.

Leaving software only to technicians to debate is a reductionist approach. What we have, really, is a cultural artifact with its own history, sociology and culture. If we talk of media culture today, meaning that our modern culture is significantly different because of it, then we are also talking about its driving force - software.

Software as a cultural artifact of significance can be just the beginning of our reflection. Consider the dominant role in today's global society of software companies, software movements, software development. Consider the social assumptions coded into everyday programs - is *MSWord* a neutral thing? Most programs, at least those that most interest the normal end-user, have interfaces: the interface is really the meeting point between machine and human, to the point where there are studies of CHI (Computer-Human Interface).⁷ Software is so malleable and complex - probably why it got the name 'soft'

Understanding read-write culture better could lead to an appreciation of the role software is playing in the creation of a new culture.

Is MSWord a neutral thing?

⁷At this point I want to signal a diversion which does not belong to FOSS, though I suspect that software design under FOSS unwittingly moves in this direction: I refer to the Language/Action Perspective or LAP, a theory of linguistic philosophy which argues that computers (and software) are there to enhance the efficiency of a prime human activity - communication. LAP argues that it can assist the

ware - that it tends to embody a culture's methods, knowledge and philosophies. We have 'intelligent' software, 'social software'. This has been a largely western thing in the past but there is no reason at all for it to remain that way, so we could expect that software produced by other cultures with ancient traditions would embody more than just new technology. It is interesting that a company called Lenovo has bought out one entire section of IBM. Lenovo is a Chinese firm. We are talking hardware at this stage, but it would be worthwhile considering what influence a Confucian mindset could have on software design, and they are developing software.

It does seem odd to me, then, that there is quite a missing link, with all the nuances of that term; a failure to connect the Church's deeply principled pronouncements with the need for an equally principled action in the area of software, or even just to reflect on the issues involved.⁸ And there are important issues at every turn: the Church is a vital agent of education - discussion of software in this context has to be more than that of finding clipart for catechists. Software becomes part of catechesis in today's world, since the task (so JP II told us in these or similar words) is to integrate the Christian message with media culture. St Augustine applied the principles of classic rhetoric to communication of the faith (*De catechizandis rudibus*), Gregory the Great told preachers to apply human communication techniques to their pastoral efforts (*Regula pastoralis*). We need something for today; maybe *Purgamentum init, exit purgamentum* ('Garbage in, garbage out') could be a good start for any homilist! Or more seriously and more classically, *Cui bono*: usefulness on the one hand, self-interest on the other.

The missing link this time is no fossil but an unexplored hypertext to Christian faith.

The missing link (software) is no fossil but an unexplored hypertext to Christian faith.

2.4 Taking up the X factor 6.6

'X' may represent many ideas, some of them not so good, but for my purposes here (and in reality it is employed this way in software more often than not) it refers to extendibility - or maybe the better word is 'extensibility', a term used in software technology to indicate

designer to design better software (for example) by making human speech acts and conversation more transparent in the design, thus resulting in better coordination of human beings who are working through digital means. This is obviously a different direction from what many unthinkingly describe computer activity as - a kind of individualist, personal passion or obsession! Today's young people instinctively use computers NOT for individualistic purposes but for conversation - they are giving us a lead we need to follow! However, LAP is not really germane to FOSS, at least not at the moment. End of diversion!

⁸Since I began writing this essay, and speaking of it and from it in public, an interesting item appeared in the weekly English edition of *L'Osservatore Romano*. LR is not everybody's weekly reading, I realise, and I don't know if any FOSS people are avid readers of it! But the centrepiece spread for n. 34, 23 August 2006 is entitled 'A ministry at the service of all other ministries'. It is about a Kerala (India) based Society called The Missionary Society of St Thomas the Apostle, founded in 1968 which has the mission ad gentes as its primary charism. This Society has produced a set of guidelines - and here we find a valuable shift which, if it became a general ecclesial shift, would alter my statement above! To quote from the MST Guidelines: 'The biggest challenge facing communication theology is to transcend the instrumental and inculturation perspective to an integration approach, where communication is valued as an integral element of evangelizing and pastoral ministry'. It is not an explicit reflection on software, but it is a principle which would enhance any reflection on it.

2 Digital Detachment

hooks and mechanisms built in to cater for future needs. Today we speak of XHTML, XML. Just what do we mean? Let me explain in as non-technical a way as possible.

Word processing as most of us know it is a process of typing on a keyboard and, as we go, seeing what we type on screen (called what you see is what you get or WYSIWYG), while at the same time adding appropriate formatting. Work on content and work on formatting, then, occur at the same time. They are not only physically concurrent but mentally attached to one another, in other words. We are so accustomed to this that we do not question it. I wish to question it - to ask how appropriate it is for everything we do, and to ask what might be some of the implications of this approach.⁹

If I can refer to something else, though, other than word processing: the web. We all know the web, and some, possibly many people reading this, would know how to put a web page together and at the very least would know that the file produced will have .htm or .html as an extension rather than .doc or some other extension. Possibly most of you know that HTML or XHTML (they are more or less the same thing) is really just text, but if you were to look at this file in a text editor, besides the content you typed in there are tags, words surrounded by angled brackets either side.

The web was built on HTML. We call this Web 1.0. The problem is that people wanted to do more and more things with HTML and invented new tags. Then came the 'browser' wars and these were really about these tags. One type of browser recognised one set of tags, another another and so on. The only solution was to standardise these tags or invent a system that allowed at least the appearance of infinite extensibility to them. It got worse, because Internet explorer and Netscape (at the time) could not be trusted to actually render the same tags in the same way! Then we got XHTML and, effectively Web 2.0 which has aimed at standardising these tags under a system which allows a wide range of extended tags. The ordinary web browser (I mean the person) does not see the difference or does not become aware of the difference, but it is there and it is significant.

Here are some of the significant issues surrounding this relatively simple development of XHTML: some web sites built only in HTML may not be accessible in a handful of years. Browsers (the software) will cease to support deprecated tags, meaning tags which cease to be interpreted meaningfully. This has already begun to occur. Think of the implications for archiving material based on Web 1.0.

Apart from that, web sites clearly cannot be read by a person with severe sight problems. No amount of fiddling with XML itself can help a blind person to read, but XML can enable a site to be rendered for Braille readers because it can give instructions to output the text on the site to Braille. I could multiply these kinds of examples; the end comment is to say that HTML has had its day, and in terms of the future will result in restricting in rather than enabling it.

⁹In fact, I can tell you that these days - for example, typing up this essay - I do not do any formatting, but first type in my content. No spaces between paragraphs, nothing! That way I concentrate entirely on my content. Afterwards, since I use *OpenOffice Writer*, I simply apply styles to paragraphs and other features (headings, quotations etc). You might argue this is double work. I argue that it improves the quality of the in I am providing, since I have separated content from form and am able to give both the consideration due to them.

2.4.1 At this point I wish to speak of XML and detachment of another kind

The 'ml' in XML refers (as it also does in HTML) to 'markup language' which is another way of referring to those tags I mentioned earlier. Your content is 'marked up' by adding tags. To make this a little simpler, and to note the difference between this and word processing as we normally do it, if I intend to write an article, I may mark up my text with a tag at the beginning like this: `<article>This is my title</article>` (or better, my software puts those tags in). My software will then interpret that tag in a certain way and produce the title already formatted (in this case in bold: **This is my title**. Here is not the place to go into how that happens and how I can change the resulting formatting. Obviously I can if I want to.

There are several implications of this approach. Let me name some - they are selective. There may well be other implications just as important.

- I no longer think of formatting as I type. I simply think of the content I am typing. This has to improve the quality of my work. I take separate steps to consider formatting.
- The tagged version of my text, the markup, is always a text file and therefore preserves my content forever more. If I save a file in binary format, meaning it is coded by the Company making it, only their product will normally open it. Coded formats of this kind occasionally become corrupted - and cannot always be fixed, or can be fixed only at cost. A text file could also be corrupted but almost always can be fixed and at no cost. The real point is that the context is preserved in a more accessible and long-lasting way.
- The marked up text obviously has to be 'interpreted' (by software) but it can always be interpreted for a range of media. If I want to turn it to paper and print it that way, I do so. If I want instead to view it on the web it needs different formatting and approaches and I ask the interpreting software to do that. If I want it to be readable by Braille, I do that, and so forth. When you use a word processor that has XML as a native format (e.g. *Abiword*, *Kword* or *OpenOffice*, the XML is already interpreted and in some instance for PDF format as well as HTML and the usual 'paper' formats. *Abiword* can save to xsl-fo which is helpful for people who work a bit more particularly with XML).

There is now an approach that detaches, separates formatting from content.

Enough of the technical side, but it was important to demonstrate that there is now available to us an approach that detaches, separates formatting from content, and that this has important and useful implications for textual material, indeed also graphics in the sense that one graphical format, SVG, or scalable vector graphics, stores its in in XML. XML is the future (in fact is already the present) for the web, for production of texts, for the printing industry. Hence 'digital detachment' meaning now not only a detachment from things, from pet ideas and ways of doing things, but also an actual process whereby we detach content from form. We should not go on unquestioningly

with current processes and approaches once we understand some of the ramifications of using only proprietary software.

2.5 YADDI - yet another digital detachment idea

The FOSS movement has taken a liking to acronyms that begin with YA..... If you are a user of Linux, you may have come across YAST, Yet Another Setup Tool! So let me add YADDI to the list of acronyms.

When the GNU Project for Free Software started up, its prime mover, Richard Stallman, also introduced the world to the idea of copyleft and GPL. Stallman, we note, professes atheism, but he does make the point in something I read of the history of the GNU Project that despite not following any religious leader (a fairly mild form of atheism, I suspect!) he does sometimes admire what one of them says. I find it significant that he began the GNU Project as part of what he calls a 'stark moral choice'. He had been part of an MIT software-sharing community in 1971, a community which eventually collapsed. As he put it:

The easy choice was to join the proprietary software world, signing nondisclosure agreements and promising not to help my fellow hacker. Most likely I would also be developing software that was released under nondisclosure agreements, thus adding to the pressure on other people to betray their fellows too. I could have made money this way, and perhaps amused myself writing code. But I knew that at the end of my career, I would look back on years of building walls to divide people, and feel I had spent my life making the world a worse place. (<http://www.gnu.org/gnu/thegnuproject.html>).

Why did he introduce the idea of copyleft and GPL, and what are they? Basically, Stallman needed his new 'community' (GNU Project) to be able to distribute software freely without the danger that it would then be taken up and turned into proprietary software. He might be an atheist but it seems he has clear ideas about where angels and demons reside! So they invented 'copyleft' and the General Public License (GPL). Copyleft uses copyright law but, as he says 'flips it over to serve the opposite of its usual purpose; instead of a means of privatizing software, it becomes a means of keeping software free'. The central idea of copyleft is that you give people permission to run, copy, modify and distribute a program but not to restrict it in a proprietary way.

It did not take long for the idea of copyleft to reach the wider publishing community, especially that of print publication. There are ways of applying copyleft to this latter. One of these is called Creative Commons.¹⁰

¹⁰Creative Commons was created by Lawrence Lessig, currently Professor Law at Stanford University, and author of several books. Lessig, in a very recent statement (15 August 2006 in fact), not so much on Creative Commons but on the broader picture, speaks of 'trans from a read-only culture to a read-write culture where people participate in the creation and re-creation of software. The most exciting explosion of the Internet for culture is the opportunity to revive read-write culture, not by eliminating read-only but by complementing it'. Lessig argues that copyright offers a perfect

2.6 Creative Commons

Creative Commons protects authorship but does not restrict its fruits, unless and to the degree that the author chooses to restrict them. Essentially it is a 'some rights reserved' approach rather than an 'all rights reserved'. You see, here again we have not questioned something - that small ubiquitous copyright © symbol on printed material! That immediately implies maximum restriction.

Some studies have shown that scholarly material published under Creative Commons licences really does interest people, especially if part or whole is published on the web as well as in print - they see the web version, feel free to use material from that (because the licencing explicitly allows this), but eventually want their own printed copy. There is an interesting article called 'The Long Tail' in the online *Wired Magazine* from 2004 on just this phenomenon.

Lawrence Lessig gives a clear indication that once we enter this area of copyright (or left), we have really entered a much wider field of 'free culture' and its implications. That's too much to take up here (other than maybe noting Lessig's three steps in the footnote below), but does it signal an area many Religious Congregations should give some broader thought to for at least some of their publications? If they are producing materials intended mainly for the formation of their members or associates, or mainly for the purposes of evangelisation, why use an 'all rights reserved' approach? I leave that to my readers to debate.

The digital detachment I am speaking of here is a detachment from some of the so-called fruits of one's labours, but I am referring to authors and publishers. I don't know the whole picture, I have little experience with the publishing industry and have made very little financial gain from the one or two items I have personally published, but I believe we should investigate this area for the possibilities that copyleft may offer. And remember, I am not suggesting that one should not make money from one's work; only that we have failed to question the assumption that the only way to make money from authoring is by applying copyright.

CopyLeft - does it deserve some consideration by Religious Congregations who publish materials?

Why always use an 'all rights reserved' approach?

2.7 The shift from read-only to read-write culture

The footnote comment on read-write culture is worth further comment. We now have an almost perfect read-only Internet. Unbelievable amounts of information are available at a single click, for the use of the consumer. But blogs, photo journals, *Wikipedia*, *Flickr*, *Myspace* have changed the nature of the Internet from read-only to read-write culture. People want to do more than consume. Enter 'detachment' once more! Digital

control over read-only culture. In his view it hasn't always granted this level of control. 'In the old world most uses of culture were unregulated copyright for commercial uses', Lessig said. 'In the digital world, every single use produces copy. So every use needs permission'. The law as currently architected smothers read-write culture with the view that control is necessary, Lessig says. Lessig suggests a threefold step to fight for free culture: 1. Free culture is not piracy. Piracy should never be defended. 2. Practise free culture and participate in it. 3. Enable free culture with a free platform to make it possible for free culture to flourish.

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consumerism and read-write head in different directions (it would be too much to say they are at opposite ends - not yet, anyway). If I create a document (this one!) and put it on the web, according to current laws of intellectual property I have rights over that document and any copy or re-creation of it is technically illegal. But for now it is not the law I want to highlight. I have created a little item of culture here entitled 'digital detachment'. Human beings such as myself (and yourself) often mix and match the culture around them to produce new items - and today's human beings, especially the younger variety, are doing this daily via the Internet. I would regard what I have written as the fruit of personal reflection, but that does not mean I have not read avidly in this area and picked up ideas from my reading. At least for many of its readers it is an introduction to new understanding, new knowledge. Why should I take forceful efforts to lock up this knowledge, privatise it? In this case, at least, my hope is that others take what is written here and develop it, change it if they wish, certainly add new thoughts. The only true right I have is a right to recognition for 'my' little item of culture. Beyond that, I would hope that it is not a read-only, but a read-write item of culture.

*Why should
I take
forceful
efforts to
lock up
knowledge,
privatise it?*

Consider too, that this discussion is framed within the context of general western culture, perhaps European might describe it best, where intellectual property law has been formulated. I have experience of other cultures such as Australian aboriginal or Pacific Islander (including New Zealand Maori) cultures where such legislation is arcane. It does not respond to the cultural thinking. Those cultures, if one may generalise for this purpose, would query an approach where any individual (or group defined in law with the rights of a juridical person) can somehow privatise knowledge as his or hers, when the broader community would want law to recognise that the individuals owe their knowledge and creation as much to the community they come from as to their personal ingenuity.

I cannot state with any clarity what reaction there has been in these cultures to the idea of read-write culture, though efforts have been underway in New Zealand for some time to finding an appropriate meeting point between 'western' intellectual property law and the Maori community's sensibilities. I have a feeling though that read-write culture would meet fewer objections in this regard.

In fact, how best to describe read-write? A wiki is a website that is read-write. Anyone can enter and change what is there. If I put this document on *BoscoWiki* (there is such a site, a website which includes a wiki in this case), all readers could quite possibly make it a far better document. But I need a degree of 'detachment' to allow my original document to be altered that way.

Unfortunately, simply by writing this document and putting it on *BoscoWiki* (or any other wiki) I would not be fully demonstrating today's read-write culture. It leaves out an essential element. As I once heard someone put it, writing words is today's Latin. Video and sound are today's vulgar languages of the common people, and it is the creative mix of words, video and sound that is producing much of today's digital culture, a culture which wants to be a free culture, not a culture hamstrung by law and restriction. Today's young people, the digital set amongst them, live and congregate frequently in digital space with names like *MySpace*, *YouTube* and the like. This is read-write culture.

I am of the view that no Church document that I have read yet really confronts this

issue. It is but partly recognised in terms of 'interactivity' on the Internet, but as for read-write culture - no serious mention as yet.

2.8 Our way forward

All the foregoing is but a long introduction to some practical ways forward, but I wanted to bring together a range of ideas that have been developing over a period of time. Over that period I ran these ideas through several filters, including publishing them in a series which went on for seven weeks, called 'F/OSSERVATORE and was sent regularly to some 50 or so interested persons around the globe. I felt it was necessary to do this to gain reactions, hammer out ideas on the anvil of public opinion, a kind of minor read-write activity of my own. One must practise what one preaches! But now we need to move forward and respond as members of institutes of consecrated life.

The way forward in my view is to attempt to draw up either a policy statement or a set of guidelines, or perhaps set up a pilot case (a province or a region) with the suggestion that the policy or guidelines or experiences may be worked into existing policy statements or new ones. It is possible that the Eleutheros Manifesto may offer us some ideas (may be consulted directly in English or Italian on the www.eleutheros.it site).

2.8.1 Motivations

I have offered a range of motivations so far, but these are personal ones, and are mostly from a philosophical or ethical perspective. I have not included some of the 'negative' ones, such as the reality that many people, Religious included, and especially those in parts of the world where software piracy is already rampant, have no real conscience about using pirated software. I believe this is wrong and that we should address the issue. FOSS is an obvious way to do so. What kinds of motivations do we want to include in any policy? Ones such as: a concrete way of overcoming the digital divide; an act of citizenship in today's digital society? And a pragmatic one - to reduce the enormous costs incurred in the purchase of software? Think for a moment of any of today's Religious Congregations, many of whose members have a computer, or at least most of whose communities would have one. How much does that cost? Think of the upgrades, think of the information technology courses, the equipment to run them with...

There's more. Software can be pirated but not computers. Let's say you 'receive', gratis, a pirated copy of the latest Windows operating system; you are then forced to buy a relatively up-to-date computer to run it, whereas the right Linux distribution can help keep 'obsolete' computers running and running well. It is appropriate, then, to ask - are we guilty of dumping huge numbers of western, old computers and all their toxic components into third world countries without any landfill protection policy to take care of the items when they cease to be useful?

When presenting the issue of FOSS to ordinary users, and especially ordinary users of the village kind in places like Africa, India, Fiji, I have adopted a four-point set of motivations in the following order: Evangelical, Ethical, Educational, Economic. I deliberately begin by making the main issue one of the gospel interpreting a significant

What kinds of motivations do we want in a FOSS policy? What might the total cost of ownership of computers in a community, province, be?

feature of culture today, and offer the economic reason as the last! This at least establishes one's priorities clearly.

2.9 Policy 8.6

One could adopt two points of view: perhaps there are already statements in a document where an Institute outlines its approach to communications, and these could be further interpreted along FOSS lines. Another view is that in fact this area is actually absent, and perhaps the overall framework has not been spelt out in a document. In that case, should there be one and if so would it include FOSS? I guess a third approach is that FOSS (if we agree it is important) belongs not to an overall framework for communications but to some other documents.

The point is that if it is not written down somewhere, it effectively does not exist as part of the 'system'. I urge that we think about this. We may have individual good ideas and intentions, but 'policy' enshrines this at an institutional level, and I urge that this issue be given some thought.

One of the strategies I believe we have to offer is a practical one. How do people actually move forward in this area? What do they do to begin? If we do not state this, then we run the risk of false starts which will bedevil the process. For example, it would be a mistake to suggest that people begin by switching operating systems from Windows to one of the many Linux distributions. Linux may or may not be a good move for them. I have gone that way with an older computer and I see certain advantages. But I also see the advantage of using both - and both are possible on the one computer by means of dual boot or virtual machine.

A tried and proven way forward (I have done this myself) is:

1. Adopt a FOSS web-browser - *Firefox* or *Opera* (or other) and email client - *Thunderbird* (or other).
2. Adopt *OpenOffice* (or other FOSS Office suite, but OO.o is easily the best, possibly at the moment the only complete FOSS suite).

If an individual takes those steps, available on Windows, 90% or more of one's daily work has already been opened up to OSS principles! An additional step is to add in other programs used occasionally and available in OSS. A final step is to add in an operating system. 'Adding in an OS' does not necessarily mean wiping your Windows! There are several options open to people to use both OS's:

- Use a LiveCD of another operating system;
- Dual boot, i.e. install a Linux distribution on your machine in addition to Windows;
- Set up a virtual machine. A virtual machine (a computer-created computer, if you like) sits inside the existing (presumably Windows) operating system.

Is there an overall policy framework for communications in the Institute and does it include FOSS? Could it?

How can people actually move forward in this area?

There may be other experiences out there. I have not touched on things like servers and other high end use. We could take more drastic steps still, which may or may not appeal to the user: send and accept only open formats where humanly possible, is one such. This could have serious implications for any group, and possibly for practical reasons may not be applicable except by some individuals because we are so immured in proprietary formats and need still to be able to communicate with others who only use proprietary formats and software. But there are things we can do even at an institutional level: we speak of *PowerPoint* as if it is the only form of presentation software in existence. Let us talk of 'presentation' instead - keep the reference both general and descriptively accurate. With a little effort a number of these kinds of 'open' references could be listed. We forget the symbolic import of our language at times.

2.10 Conclusion

I lay no claim to special competence, but restate a personal conviction based on some experience. I personally have ceased paying for upgrades in most areas, and use FOSS and Linux for that matter happily in conjunction with proprietary software already on my computer. In some specialised instances (linguistics) I use costly proprietary software because I need that for my professional activity. Should such software ever be available as Open Source (some is - *AnSWR*, for example, for quantitative and qualitative analysis of surveys) I would use that by preference.

One of the costly, professional pieces of software I use has qualitative text analysis as its function. It is a low form of artificial intelligence which uses what the industry calls an 'iterative learning process'. Essentially this means that the software can tell us what are the main concepts in a collection of texts by a process of action-observation-modified action-modified observation as it cycles through the evidence many times over. While in no sense a 'religious' activity this, there is a kind of detachment going on here - the software is not locked into its original 'decision' but can change as it 'learns'; call it an intellectual detachment if you like, or digital conversion! I simply ask myself, if a computer can do it, then why not I, and for a much higher motivation? It is this higher motivation I am appealing to in this essay, and this time I find it in proprietary software!

If a computer can do it, then why not I and with a much higher motivation?

One final word. There comes a moment in this game when you actually experience detachment where it hurts, and my suspicion is that unless detachment hurts then we haven't really been practising it! I hope I correctly interpret many of Francis de Sale's images and maxims about detachment, as when, for example he says in a letter to someone: 'We are too fastidious when we give the title of poverty to a state in which we suffer not cold, nor hunger, nor ignominy, but simply some little check to our desires'. Switching away from some beloved proprietary program may well be 'some little check to our desires'. That is all it is, a tiny little virtue at best, but boy, can it hurt! It may be the moment when you have used *OpenOffice* for a while and decide to make it the default. You would be surprised what feelings you have at that moment. Or go one step further and decide to turn a computer over to Linux. Not to double-booting, but fully to Linux. There is no return! That is detachment, my friends.

2 Digital Detachment

Digital to-do list

- See that framework documents of the institution (the example given here was a document like the *Salesian Social Communication System*) contain reference to digital issues.
- Learn a little something about XML, since it is so important as a 'language' today.
- Think of a Creative Commons option occasionally, for appropriate texts. Not everything has to be the old 'copyright' claim. (cf. Creative Commons Copyright notice that follows as an example of this approach).
- Avoid pirated software.
- Consider drawing up an overall policy on the matter of FOSS.
- Use FOSS programs on Windows.

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3 Digital Discernment

The heart has reasons that
reason does not know (Pascal,
Pensées n. 277)

There would be little doubt amongst thoughtful users in the digital age, that a great deal of discernment is called for, as we try to sort out what is good and bad behaviour in things digital. What follows is an effort to reflect on this situation, drawing directly on the Christian tradition and even more particularly on that tradition as lived and understood by members of consecrated life. In this essay I try to offer some of the traditional 'tools' available to the Christian, Catholic and indeed consecrated thinker and digital user.

3.1 Discernment

Whether or not 'discernment' is a virtue in the classical form is open to debate, and perhaps now is not the time to be distracted by such a debate. What is somewhat obvious is that 'discernment' and 'virtue' are two terms that regularly keep company, especially in the context of discourse on ethical behaviour, on spirituality. A Google search on 'discernment' and 'virtue' in tandem will also quickly demonstrate that the discourse of many religious and philosophical approaches (not only Christianity, but Buddhism, Hinduism, even secular approaches) note the value of discernment in virtuous living.

In the Christian tradition, one need only turn to Paul's First Letter to the Corinthians (1 Cor 12, 13), or to any number of the spiritual Fathers, going back to someone like St Anthony the Great, one of the early Desert Fathers, or later St Ignatius of Loyola, or St. Francis de Sales, to understand the importance of discernment.

In general terms, we might describe 'discernment' as a certain keenness of insight and judgement, or even as a form of delicate discrimination. 'Discernment of spirits', again a religious term in the Christian tradition, recognises that there are certain complex influences in our life capable of compelling our wills towards good or evil. An example of such a complex influence working in negative directions, is 'concupiscence', which tends to distort our imagination or our sensitivities.

3.2 A thought from Pascal

Blaise Pascal was not only a brilliant mathematician of the seventeenth century. He has contributed much to the digital age too, perhaps far more than people realise. It is not by accident that one programming language is named after him - PASCAL. His interest in gambling and games, as a youth, led him to contribute a theory of probability which continues to be important today. But beyond his prodigious and competent output as

a thinking scientist, he has left us with deep reflection on matters that become most pertinent for this essay. People readily associate Pascal with his *Pensées*, and possibly with a single 'Pensée' above all, no. 277: 'The heart has reasons that reason does not know'. But he also wrote some lesser known reflections, one such being 'Discourse on the Passion of Love' where he raises for a second time a topic he had developed in the *Pensées*: 'There are two kinds of mind, the one geometrical and the other what may be called the imaginative'. The word Pascal employs, or better, the phrase he employs for 'imaginative' is *esprit de finesse*.

3.2.1 Finesse

'Finesse'¹ may be a fine term for 'discernment' in our discussion. Pascal actually offers a threefold description of mind, the third being the just mind, but critics often consider, erroneously, only two of them and put them in opposition his *esprit de géométrie* and *esprit de finesse*, the former being the kind of approach that might best describe today's computer, capable of dealing with enormous quantities of information, while the latter should really describe the user (at least as we might view things), whose excellence lies in a real mindfulness, an attendance on what is often most elusive, the most appropriate ethical use of the machines, the software, the procedures we are by now accustomed to in the digital world.

Finesse is balance. Finesse is delicate discernment. Users today who scoff at the fact that they have loads of pirated software, when they in fact could make other choices, do not have 'finesse' in the ethical sense that Pascal intends. Users who are given to distraction brought on by the abundance of choices, interminable navigation or surfing - and which of us is not tempted to distraction along these lines - do not have this finesse either. Indeed, it could be time to ask the question: what would be the ethical finesse required to meet the geometry of the digital world?

In his 'Discourse on the Passion of Love', Pascal, commenting on 'finesse' (which seems to pertain to the creative and intuitive rather than the analytical and calculative), says the latter (finesse) 'has a suppleness of thought which fastens at once upon the various pleasing qualities of what it loves'. This seems to be strange language to be applying to the computer, but maybe it is time for us to be encouraging deep reflection on our digital behaviour and how it meshes with our deepest beliefs and intuitions, especially for members of institutes of consecrated life who, today, have been described as people who have 'a passion for God, a passion for humanity'. Can these two passions be somehow active (interactive) in the context of the digital world?

What ethical finesse would we need to meet the geometry of the digital world?

3.3 Christian value standards in public discourse

If there is one area of public discourse which largely lacks Christian reflection it is digital discourse, the term 'digital' here broadly describing the world of computers, the machines

¹cf. William Desmond, *The need of finesse: the information society and the sources of ethical formation* in 'Ethics and values in a digital age', a contribution made in 2004 to the Irish Government's Information Society Commission.

3 Digital Discernment

and their users, software, and a range of processes, human habits too, that are now second nature in the world of commerce, personal communications, entertainment, learning, and so on.

Since it is standards of value we are talking about, and since we are reflecting in a Christian, Catholic, Consecrated context, the kinds of values involved should be clear enough - gospel values. The problem is that Jesus did not appear to be passing judgement on the technology of his day, so application of these values is the challenge. Fine - it is not so much the technology of an era that we need to pass judgement on, but the users of that technology, their habits and attitudes. Technology (the hardware, the software, the processes, technology as a system in itself) does not have intrinsic value but rather instrumental value. A computer, an item of software, even the entire 'system' which we sometimes intend by the term 'technology' or 'digital', is just there, a product of human intelligence for better or for worse, but better or worse only because of us.

*Can
'passion for
God,
passion for
humanity'
be
interactive
in the digital
world?*

3.3.1 Jesus' values

Jesus expresses three broad sets of values, easily traceable in the Gospels: he speaks of creation, such as the birds of the air and the lilies of the field, from which flows a cultural mandate (Adam is meant to look after 'the garden'); he speaks of human beings, whom he notes precisely to be 'more valuable' than non-human creation (Mt 6:26), and seems concerned at various times with life, health, shelter, food, clothing, family, friendship, always placing these in a hierarchy of values but from which a range of moral obligations flow; and he speaks of the highest good of all, the Kingdom of Heaven, of God who is Father and Love itself. The greatest moral obligation of all stems from this third set of values - to know and love God, to seek the Kingdom of heaven above all else.

These are the values. What of the standards? We know that Jesus' standards (as for example expressed in the Beatitudes) are high, idealistic and indeed unique. But they are describable. What we need to do is relate them to the digital world. We could begin to do this in general terms by keeping to the three overall sets of values: creation, people, the Kingdom of God. With respect to the digital world seen as creation (product of human intelligence), we could note how the digital world realises goods of benefit to human beings - communications technology, for example. We could even specify how it can be of benefit to missionary work or to helping people to know about God. We could equally point to the evil effects of the digital world, when the same capacity for communication is used to distort truth or trivialise things or persons of great value, even the highest value, God himself.

There is no calculus for measuring the net effect of human digital accomplishments, which is precisely the way Pascal was thinking when he spoke of the 'esprit de finesse'. The calculus does not lie in the analytical and the measurable, but in the heart, in passion, in love, and in the effort to apply the kinds of values Jesus sets out for us.

When it comes to the second set of values to do with people, we might turn to a revealing passage from Luke 10:38-42: 'Martha, Martha...'. Jesus is passing judgement here on human behaviour, since Martha has become distracted by the many things she has to do, while Mary is focused on the supreme good.

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It is not difficult at this point to begin to reflect more directly on our digital habits. Computers, software, command both time and attention, and both are scarce resources. The digital world often proposes itself as the way to facilitate at least one of those resources - time. Digital calendars, time management devices are part of this. All of this is good. But anyone who has used a computer for a while knows how it can demand far more attention than it is worth. At times this attention simply must be given - the software has to be learned, applied, adapted even, or the computer has slowed down, or a virus has disrupted procedures, and so on and so forth.

There is another reality too. The sheer power and capacity of today's software means that it can do far more than the human being is capable of doing, and seems to invite us to do all those things. In almost every instance, software multiplies our opportunities - in itself a good thing - but presents us with so many opportunities that we would be unable to rise to them all, and the attempts we make to rise to even some of them take time and attention away from more important things.

For people who profess to be focused on the one thing that matters, to proclaim the priority of God in their lives, the digital world is a potential minefield of distraction!

3.4 Derivative goods

At this point we touch on a number of issues already raised in the first essay in this series: the digital world has given us a huge range of derivative goods. Abundance is a good - certainly as it flows from the God of Jesus Christ with his images of banquets and the like, abundance is a good. But in the digital world, we are tempted to argue in simplistic terms, and also because the 'abundance' here is a material thing, not related to the highest good. We think that because something is good, then more would be better. Hence the creeping featurism and software bloat we accept uncritically.

We champion freedom of choice - one of the reasons, one of the good reasons for opting for FOSS. But freedom of choice in the digital world offers us too much variety and we oftentimes do not have the capacity to be discriminating. We lack the finesse! Speed, power, efficiency, productivity, economy, ease, functionality are all goods deriving from the digital world. Digital technology (the entire system or systems) is even a derivative good in itself, but all these good things which result from the digitising of our existence can reach the point where they, as means, substitute the end. Think too of the time, effort and often money involved in learning, acquiring, insuring, using, paying for, maintaining, dealing with the consequences and even disposing of digital goods. There is a moral element to each of those verbs. Take the issue of disposal - what happens to materials which have built-in obsolescence, especially in countries where there is no proper landfill policy? Is built-in obsolescence moral?

*Is built-in
obsolescence
moral?*

3.5 Digital distraction

If there is a central vice in all of this, though, for consecrated persons it is 'distraction' from the one thing that matters. At no point would I rail against digital approaches

to life - short of becoming a hermit, I am not sure how anyone can avoid the digital today.² Even the Amish have some basic, sensible exceptions to their approach which shuns much of today's technology. They too want to focus on the one thing that matters, not just write silly rules that make life difficult for people. I have had at least one lengthy conversation with a recently founded group of Religious who have chosen to live a lifestyle which does not permit television or radio and limits the use of digital devices - but the discussion was about the possibility of them setting up a website to present their institute to the wider world!

Again, the issue demands much deep reflection based on Gospel values. We need to recognise hardware and software for what they are - cultural artifacts which present us with very attractive stimuli - attention-getters in simple terms. We are human after all. Technological objects, hard or soft, claim our attention. Interesting, is it not, that Jesus deliberately it seems, presented the Kingdom in less salient terms - the mustard seed and the grain of wheat under the ground, the yeast: none of these claims much attention. A technological object is likely to claim our attention every time over watching grass grow! In fact, did not Jesus say 'The coming of the Kingdom of God does not admit of observation'? (Lk 17:20).

The situation is not much better when we place the issue of 'time management' before the Gospel. The digital world is an 'urgent' world - cellphones, email and the rest. We profess the urgency of the Kingdom of God, its 'now' factor. But just as the Kingdom of God does not admit of observation, nor does anyone know 'the day and hour', neither the angels of heaven nor the Son! (Mt 24:36). Digital urgency, again, will win out time and time again over evangelical urgency.

We need to recognise hardware and software for what they are - cultural artifacts... attractive stimuli.

3.6 From scripture to theology

William Desmond, full professor at the Institute of Philosophy and Centre for Metaphysics and Philosophical Anthropology at the Catholic University of Leuven,³ is one person who has begun to think through some of the philosophical implications of today's digital world. Apart from the obvious reference to 'finesse', drawn from Pascal, Desmond posits another notion which could bear further reflection by members of consecrated life. He speaks of 'the community of agapaeic service'.

Desmond describes agapaeic service thus: 'it is less concerned with things or other humans as serviceable for us, but of our being in the service of a good that transcends us, and in an ultimate sense'. The service of generosity Desmond is describing here is the kind of thing that draws a person to be a true teacher dedicated to the good of the student. It is not difficult to see how it would be applied *a fortiori* to the life and action of members of a religious community.

²Indeed there is an example where the hermit, in this case a community of Benedictine monks in the New Mexico desert, have taken up a digital ministry par excellence. In simple terms, the monks of this autonomous monastic community have used digital technology to update an ancient ministry involving scribes, texts and God's Word. It required community decision and involvement, followed by management. The result is illuminating. www.nextscribe.org, www.prayerbuddy.org.

³cf. Earlier footnote on 'Finesse'

So where does this fit into the digital world? Desmond sees the enormous expansion in avenues of communication leading to greater interaction between human beings in the service of the good of humanity. I am sure he is not thinking directly of Free and Open Source Software, but he certainly creates an opening for understanding this even theologically as being within the realm of agapaic service: 'we easily forget how much is made available for human use, for free and for nothing. This is a kind of service of generosity, that in some respects no one owns, and yet that makes itself available for those who have the means of accessing it'. He sees the digital world as offering 'a new porosity between human beings (that can be evil, in the case of a terrorist network but good when it means we become more aware of the suffering of other human beings and able to help)'

3.6.1 Questions behind the instruments

The point of it all is this: instead of simply instrumentalising our hardware and software and digital processes, we also need to ask deeper questions - why am I doing things this way? Can it also help me and others to be more human? These are not questions way, way beyond some of the 'simple' facts of digital living - we just have to help people to ask them, that's all, and perhaps it is one of the roles of people who live in professional agapaic communities, if one may describe a community of consecrated life that way, to help people ask these questions.

An example might be the 'simple' issue of file-sharing. File-sharing has become very popular in ordinary life for people who have access to computers and the Internet. For many it is synonymous with file-getting. But there is strong evidence to suggest (apart from any theological perspective on this) that people have strong giving or gifting needs. This has given rise to the opportunity to develop gifting technologies. Desmond would call this a 'sabbatical orientation' to life, the sense that we can be grateful beneficiaries of something that we do not deserve or produce through ourselves alone. Online sharing, collaborative authorship are possible and in many cases desirable today. It goes much further. Newsgroups, blogging, donation of expertise all belong to the 'gifting' phenomenon. And anyone who knows a little about the history of the Internet as such knows that in its early days there was so little to actually 'get' that the Internet was a space largely characterised by volunteer effort, community spirit, helping one another, participants sharing advice, technical support. I know. I was there! We should not simply let all this experience go without reflecting on it in theological terms, and the point may be an even stronger one: witnessing the double passion for God and for humanity could mean witnessing to being 'gifting' communities in the senses expressed here.

Why do I do (digital activities) the way I do? Is it worth questioning the processes I use? Could I do things in a more human way?

3.6.2 Applying the Church's social principles

Another tool that might well be applied to help us discern our place in the digital world, especially in terms of our behaviour, is the Church's social teaching. The Archbishop of Dublin, Diarmuid Martin was, before his appointment to Dublin, the Vatican representative at the United Nations in Geneva. He was part of the early negotiations for

3 Digital Discernment

the UN World Summit on Information Technology that had its first sessions in Geneva. The Holy See had suggested that thought be given to the ethical dimensions of information technology, which is essentially digital technology. Martin, noting the sensitivities of many members of the UN from different creeds and political persuasions, decided to initiate this kind of reflection amongst them from an incontrovertible basis - the human person.⁴

He made the point that the digital age is about people, fundamentally. We may once have spoken of the raw material of an economy as land, and then, in more recent history, as capital. But now the driving force of the digital age and economy is human potential, human capacity, creativity.

Catholic social teaching posits the central role of human dignity, a dignity inherent in each human being because made in God's image. So the first ethical imperative of the digital age has to be respecting and enhancing the dignity and capacity, the esteem of individuals. People can quickly become the objects of digital technology, where instead we should be helping them to become active subjects in the construction of the digital age.

In just this single central tenet of social teaching we have a strong argument for putting Open Source software, free or not, but it usually is, into schools, especially in parts of the world where people are poor. Development is not just about adjusting situations of economic deprivation, but also means enabling people to enhance their God-given talents, helping them to realise themselves and their creative skills. Working with this kind of software offers that possibility, because it places no barriers beyond those which they have a right to overcome through effort - learning, for example, how to manipulate the software to their own ends.

The digital divide, Martin reminds his listeners or readers, is never just the digital divide. With it goe similar divides in education, health, wealth, infrastructure.

A second principle of Catholic social teaching concerns the goods of creation. When God created these natural goods they were for the benefit of all human beings. This social teaching has usually been applied to land or wealth distribution. Now, in the knowledge society which the digital age has made possible, the issue may well be that of intellectual property. Martin would be aware, having worked with the UN at Geneva, that one of the great icons of intellectual property control, WIPO (World Intellectual Property Organization), looks across and down on the UN building itself! Catholic social teaching has always defended the right to private property, but not only. Catholic social teaching speaks of private property carrying a 'social mortgage'. Now, knowledge is the property of all. We cannot stand by and simply allow private interests, or corporate interests more so, in the case of the knowledge society, to control access to knowledge for the sake of profit. Whatever we may think of copyright issues, the public debate on intellectual property rights, on such things as Creative Commons licencing for example, deserves the input of Catholic social teaching. Is there much recourse to such teaching and principles?

Finally, there is the biblically-based principle of Catholic social teaching called 'the

People can quickly become the objects of digital technology, where instead we should be helping them to become active subjects in the construction of the digital age.

Is there much recourse to Catholic Social teaching (by us) when it comes to digital issues?

⁴Diarmuid Martin, in the previously cited conference on 'Ethics and values in a digital age' 2004, the Irish Government's Information Society Commission.

preferential option for the poor'. The principle invites us to think of issues of inclusion as opposed to exclusion, and once again there is so much activity in the digital world now that touches immediately on these issues. We may have an opinion for or against the OLPC (One Laptop Per Child) project of Nicholas Negroponte, but we should at the very least be informed and ask ourselves to what extent it can address the question of inclusion for the world's poorest children.

3.7 Community discernment

Much of the discussion in this essay seems to sheet back to the individual - we normally think of the 'user' as an individual. The reference to an 'agapaeic community', however, highlights another perspective. The community, in this case the religious, consecrated community.

Discernment, especially as the term is employed in religious life, is often a community exercise. But how often would a religious community reflect on the kinds of issues raised in this chapter? Or how many religious communities around the world, in their own contexts, have done so? To what extent have religious communities (local, provincial, worldwide) considered what might be broadly called 'digital policy'?

By taking just some of the matters alluded to here, and using a straightforward method of community discernment, some very interesting conclusions might be drawn.

1. *Naming our experience*: What aspects of digital engagement (right down to the simplest level of the member who uses a PC or laptop to write letters) have had the greatest impact on the life of this community? If we are a world wide community, how do the responses differ according to continents? What does that say to us?
2. *Reflecting on our experience*: If we begin to critically analyse our experience, are there events, changes in society, in the Church, which speak to the impact the digital age has on us? In what ways has our lifestyle been influenced by the digital society we live in?
3. *Shedding light on our experience*: Are there charismatic elements (icons of our congregation, sayings that go back to the Founder, actions of the kind...) that seem to speak to the things we have so far highlighted? Is there any kind of 'digital divide' involving our experience and our charism - things that might shock us perhaps, or help us to shed light on things? Is there any element of the Spirit involved here?
4. *Considering alternatives*: The digital world impacts us on with both challenge and promise. What kind of digital engagement (again at any level) does our charism and our mission call on us to rethink?
5. *Choosing a horizon*: People who are simply users, almost objects of digital driving forces, have no special horizons. But people who are active subjects act best when they have clear horizons, even distant ones. What kinds of horizons (e.g. Biblical,

How often would a religious community reflect as a community on some of the issues raised in this chapter?

In what ways has our lifestyle been influenced by the (digital) society around us?

charismatic...) can help us think ethically, responsibly, in terms of mission as influenced by, affected by, empowered by digital matters?

6. *Deciding on action plans*: Have we arrived at a point where our digital involvement/engagement/use actually deserves planning? What strategies might we want to adopt? How do we create and provide opportunities to achieve these things?

The questions are quite broad and remain deliberately applicable to a wide range of religious community experience, but with some thought and creativity, could easily be adapted. Elsewhere we have hinted at a sufficient range of issues to fill out these questions in particular ways. Would a community (local, provincial, world) benefit from some kind of policy on software, for example? Or even see the possibility of such? Would a community feel obliged or moved, perhaps, to be better informed about some of the deeper issues that the digital age confronts us with and that we can do something about?

Are there charismatic elements which might speak to some of the issues we are raising here?

3.8 To conclude

We began with Pascal, and the man deserves more appreciation than simply his 'wager'! He speaks to our age in interesting ways. Pascal flirted with other wagers in his youth - gambling and numbers. But he subsequently offered mature reflection on his need to distract and divert himself. It is an apposite reflection for us too:

What strategies might we want to adopt?

When I have occasionally set myself to consider the different distractions of men, the pains and perils to which they expose themselves at court or in war, whence arise so many quarrels, passions, bold and often bad ventures, etc., I have discovered that all the unhappiness of men arises from one single fact, that they cannot stay quietly in their own chamber. (Pascal, *Pensées* 139).

As it was true for the solitary individual of Pascal's day, so too is it true of the solitary user sitting interminably behind a computer, except that his point was the need for distraction, not simply solitariness. Now we find our distraction and enjoyment even in our solitariness! One suspects that Pascal's 'finesse' must come into play here, since it invites us to explore other orders of being than those limited to the human perspective. Pascal's idea of distraction was not that of a profligate fling, but the genuine need for 'distraction' in deeper directions like reflection on first principles, moral truth, divine revelation.

Digital to-do list

- Spend some time actively trying to apply Christian (Jesus') standards to digital matters.
- Take some practical steps towards digital activity which encourages collaborative authorship, inclusion of those who would otherwise be excluded: this might mean considering Open Source as the preferred approach in an educational setting

3 Digital Discernment

(school, youth centre, parish...), learning about a wiki, or using an existing one, etc.

- Use the community discernment outline provided here or draw up a similar one to meet local circumstances.
- Attempt an answer to the question: what kind of ethical finesse is required to meet the geometry of the digital world?
- A passion for God and a passion for humanity - in the context of the digital world?

4 Digital Prudence

Including the importance of
being analog!

In this essay I maintain that prudence is a virtue to develop in digital thinking and acting as well, while aware that in yoking 'digital' and 'prudence' together, we may be creating quite a problem for ourselves. Why? Because prudence seems to imply a degree of flexibility, and if there is one thing 'digital' is opposed to, it is flexibility, in the sense that 'digital' is about binary bits, ones and zeros, which do not allow for variance. This is the very reason many people prefer 'digital' over 'analog' (here using the American spelling, since this clearly marks it out for the electronic world - the term 'analogue' has other uses and nuances in other fields).

4.1 The virtue of prudence challenges the digital world

Some five hundred or more pages of Thomas Aquinas' *Summa Theologica* are devoted to virtues, including comments on almost every line of Aristotle's *Nicomachean Ethics*. He, Thomas, outlines cardinal, theological, moral and intellectual virtues. One of the cardinal virtues is 'prudence', which lies at the crossroads of how we think in our heads and act in the world.

Digitally produced sound eliminates much of the variance or interference in real life sound. Analog sound copies real sound - is analogous to it - as much as is possible, with its physical peaks and dips as represented, for example, on the now forgotten vinyl. Digital representation on the other hand is abstracted from physical reality and the sum of binary bits bear no relation to the physical sound. But their sum will always be the same, will always be totally controllable. The sum of real life bits tends to vary every time and is anything but controllable!

It is this very variation, flexibility in real life (which implies behaviours like judgement, flexibility, communication, creativity) which calls for prudence. In the digital world there seems little reason for prudence. Yet we are about to argue that one of the virtues of the digital world needs to be the choice not to be digital occasionally! That is the sense in which we are writing of digital prudence.

We cannot turn the clock back, be it analog or digital! We are now part of a digital revolution, and we must deal with it. In this series I have been arguing for 'digital virtues' as a way of approaching this revolution positively, not as a way of suggesting that everything virtuous must be digital or that everything digital must be virtuous. I have also been arguing for practical behaviours, digital virtues in practice.

What we have to be clear about is that machines now and into the future are likely to be digital. People, on the other hand will remain analog - they cannot be digital.

One of the virtues of the digital world needs to be the choice not to be digital occasionally!

Problems arise when we forget that and allow the digital world to dehumanise us.

4.1.1 Redeeming memory

Prudence, in the analog or digital world, is no vague entity. One of the angles from which Aquinas examines prudence is its eight integral parts or capacities which must be exercised for its full expression: memory, reason, understanding, docility, shrewdness, foresight, circumspection, and caution. We recognise 'memory' as possibly a common factor to both the analog and digital world. Aquinas actually endorsed an ancient system of memory improvement when discussing memory as part of prudence.

He had good reason to. Even though writing was invented well before Aquinas' time, he knew that not everyone of the great ancients had welcomed the advent of this technology. Plato resented the incursion of writing into the realm of memory. Horace talks, jokingly, about the unaesthetic moths eating into his books. The worry was not a technical one, in reality, but a solid one which we can recognise when we think about it - where is great or important literature best preserved? On the page or in the hearts and minds of the listener/reader?

The digital world is beavering away at memory in ways that might even be alarming rather than exciting. The convergence of advanced information technology with cognitive science means that it is possible for computer memory chips to archive human memories. Preferences, opinions, beliefs, attitudes can be elicited via responses to questionnaires, for example. People's episodic memories can be narrated - and all of this information can be converted into digital form. The point here is not to make outlandish claims for the digital world, but to recognise that it is becoming more difficult to determine precisely what is human and what is machine.

In a digital world we need, then, to redeem the human capacity for memory.

4.1.2 Redeeming time

Think for a moment how time behaves. In the digital world we can compress time - one reason why we have faster and faster processors. It may be true that the human brain is a blindingly fast processor (well, for most people - not sure about mine), but we are not working on an even faster human brain. We accept it for what it is. We are working on faster processors though, with a view to achieving the speed of the human brain.

In the analog world, if I reduce the time available for a process, I usually reduce the quality of the process. We need time to make judgements, adapt to situations, even to be creative. We certainly need time for reflection. 'Fast time' should not push out 'slow time' when the latter is the only prudent way to do certain things in life.

In the case of digital time, we are likely to arrive at process times that are, literally, dazzling, but no less effective for their speed. Fine, when that is appropriate.

In a digital world, then, we need to redeem time.

4.1.3 Redeeming variation

For most human beings, variety is the spice of life. For digital things it is the end of life! Everything digital must be reduced to 1-0 and that allows for no variation other than binary. In that situation, either-or is hardly about choice. Any unanticipated variation breaks the system. Software may be able to appear to 'guess', to respond to any variety of situations, but in reality, the software code writer is the one who has tried to do the guessing beforehand. The software remains 'digital' in its pre-determinedness.

Human beings are analog by contrast. We are made up of brain and brawn, have a chemistry about us that is in constant flux. We are extraordinarily error-tolerant (as well as error-prone). However this tolerance of enormous variation, redundancy (one cell dies, another takes over or replaces it) is part of the wonder of being human.

Consider language and communication - human language survives all kinds of interruptions, all sorts of errors at every level of the speech act, and human beings can even claim a degree of shared understanding at levels we cannot explain scientifically when they do not speak the same language. Human beings can communicate at deep emotional levels just by being human. None of this is in any sense digital.

In a digital world, then, we need to redeem variety.

Back to 'prudence' - before Aquinas

Thomas Aquinas, we have noted, commented extensively on Aristotle's *Nichomachean Ethics*. Anyone who wants to think through the issues of technology today is advised to catch up on Aristotle - he gave us the root term for technology anyway, and associated it with two other terms, one of which is usually translated into English as 'prudence' though really it is not quite the 'prudence' of the later cardinal virtue of Christian literature.

Aristotle's explanation of technology relies on a distinction between three kinds of knowledge: *episteme*, *techne* and *phronesis*. We recognise the first two easily enough from their use in terms like 'epistemology' and 'technology'. *Episteme* was, for Aristotle, pure knowledge, first principles, self-evident axioms. It belongs to maths or logic. *Techne* was art but referred to skill in art, the ability to re-arrange matter in a purposeful way. *Phronesis* has no real equivalent in English, but is mostly translated as prudence. It is practical wisdom. Aristotle says 'it cannot be science or art; not science [*episteme*] because what can be done is a variable (it may be done in different ways or not done at all), and not art [*techne*] because action and production are generically different...What remains then is that it is a true state, reasoned, and capable of action with regard to things that are good or bad for man'. (*Nichomachean Ethics*, 1140a24-1140b12).

We can ask ourselves whether the digital progress we are dealing with is 'good or bad for man'.

So the ethical question was already there for Aristotle, when he thought about technology. This thinking can inform our own, today. We can ask ourselves whether the digital progress we are dealing with is 'good or bad for man'!

The question needs specifying, of course. Elsewhere I have referred to 'creeping featurism' of software, and may appear to be labelling genuine attempts to develop new approaches as something 'bad for man'. It calls for prudence. 'Featurism' is an economic imperative, it seems. Software is usually complex - adding features makes it more so! But there is a genuine case for innovation. It is one of the reasons I am constantly on the

lookout for Open Source software that can be employed not just for good purposes but for better purposes. 'Open source' because it is open and enables one to make adjustments. Nothing is hidden, and there tends to be less featurism and more development of specific modules to do specific things. And because it is 'open' it tends to abide by standards of interoperability, which means I can use one specific item of software to achieve one thing and combine it with another to achieve another (and use it on different operating systems). Thus I may choose two items to accomplish a good purpose instead of having complex 'Swiss-knife' software with tricks I will never need.

Here is a very simple example. We wish to present a series of ideas and images to an audience. These can be called 'presentations' (rather than calling them *PowerPoint* which simply offers a bit more publicity to a certain vendor). If I want a very sophisticated presentation, then one or other vendor will offer such software. A FOSS office suite will also offer this. Alternatively, there are several other ways one can arrange a series of ideas and images on a page - this is just a matter of structure and presentation with completely free and simple software if one wishes. If I can convert what I have done to PDF format (and that too can be done for free, and easily), there is now an easy Open Source item of software (called *KeyJnote*), which turns that PDF file into a presentation. The slide transitions are clever and pleasing and its only two real 'features' are both features that few other presentation programs offer - effects to highlight words, and the ability to see all your slides (overview) by a simple toggle switch, then select the one you wish to view. The final *coup de grâce*, other than the no-cost factor, is the sheer lightness of the programs involved and the resultant file, a PDF, is just a fraction of the size of any presentation file.

The example is one amongst hundreds. Innovative items rather than features. *Techné* plus *phronesis* make for better choices in the digital world.

4.2 Prudence sometimes demands complexity

'Simple', 'quick', 'light', 'easy' - it might look as if these are guidelines for better choices in the digital world. Prudence suggests we examine this attitude to see what is ultimately 'good for man'.

Human beings will usually recognise that any number of good things in life come with lifelong experience, acquisition of skills over a long period. Anyone who has tried to learn a language would know that there is no such thing as the perfect six week course - certainly not for fluency and at best for the achievement of one or two limited goals: a little vocabulary maybe, a grasp of grammatical structure, the ability to follow the gist of a conversation.

Should it be so different for much of the work we do with text and images and other elements in a multimedia context? I doubt it. But the suggestion (the sales pitch, if you will) is often that it is just 'type, click and publish'. This is quite the antithesis of reflective, careful, mature preparation of materials.

Digital products do enable speed, or mostly do, but this speed and ease should be applied where it is most useful - for repetitive tasks, for example - and not where thought,

time, meticulous acquisition of skill is required.

Which brings us to an issue that I believe deserves consideration here. Whether it is a good or a bad thing, the reality is that Religious Congregations produce sheer mountains of text! If they must, then they ought do it well. The problem is that we have become seduced by WYSIWYG, point and click, technical speed and ease to the point where we absolve ourselves of much personal responsibility for the appropriate technical preparation of text. 'Appropriate' refers to the intended output channel; 'technical', given the discussion above, means *techne* plus *phronesis*. A text prepared in a word processor may have a number of output channels, some intended, others ultimately necessary but not immediately considered. If a text is only intended for the author, then it doesn't matter much how it is prepared so long as it meets the purpose. But if it is prepared for others, then - which others, where, and how will they be accessing it? Would the text benefit still more others by being conserved longer term? The answers to these questions will determine how it should be prepared.

Who is the document being prepared for? Who needs to access it? Would long-term conservation benefit others?

4.3 Prudent digital standards

Structure is a key to digital production today, especially of text ('text' being employed here as a broad term which may include image, sound, video). Structure, combined with powerful languages and open standards, enables the reliable transfer of information between machines and humans, and across digital systems. Structure (sometimes called 'semantic structure') is largely overlooked in text production today, since it is not the same as, or need not be the same as, physical structure of a text. Semantic structuring is possible, and the tools are available for it, in even the most commonly used word processor today, but it is largely ignored. Some consequences of the lack of structure are reduced capacity to conserve material, limits to reliable transfer of information, and inefficiency (time wasted through unnecessary repetition).

Presentation is important too - but not as the central feature of text. Presentation ought be related to structure, and a language like CSS (cascading style sheets) is an example of how the two can be related; related intimately, but separate.

Behaviour might be a new term for many in this context. It is not being used in an ethical sense here, but in a technical sense. It applies to text on the web, and one way or other, much text production today needs to consider the possibility that it will find itself on the web. There is the structural layer, the presentation layer and the behaviour layer (or some might call it the interactive layer). The point being made here is not the *techne* or how-to, but the fact that structure plus presentation is not the full story on the web. Everyone knows what hypertext is today - that is 'behaviour'. How many of us even consider using something as simple as hypertext in a document? But the term 'behaviour' would not normally be used for hypertext. It is more likely to apply to interactive activity accomplished by something like JavaScript.

4.4 A prudent look at 'the Net' with biblical help

In the Church's recent literature dealing with the digital world (I am thinking of the 'official' literature be it papal statements of the kind one finds each year on Social Communication's Day or pronouncements by bodies like the Pontifical Council for Social Communications), there is occasional reference to the 'Net' or 'Web', noting the metaphor that also exists in the New Testament, e.g. the injunction to 'throw the net out to starboard...' (Jn 21: 6ff). But it does not go much further than a reflection of a general kind on the metaphor. Given the fact that prudence is a cardinal virtue on which others hinge, that it is a guide for conscientious decisions, some reflection on the biblical metaphor of the 'net' may be helpful as part of our appreciation of digital discourse.

The Johannine passage just referred to is only one kind of net in the New Testament - the 'throw net' (*amphiblestrom*). There is another term, appearing as many as twelve times in the New Testament, *diktyon*, a general term for net or even net-work (rather than network!). But there is a third term, employed in Matthew's Parable of the dragnet (Mt 13:47-50). This is *sagene*, a seine (derived, via Latin and French, from *sagene*). It is only in this one instance that we find this term, and it offers us another way to understand today's Internet.

The dragnet picks up everything. Interestingly enough, the small parable does not even mention the word fish! Flotsam, jetsam - and fish, may be collected in such a net. The image is helpful for us, since the Internet, which depends on the digital of course, to function, is not discriminating. It is more like the dragnet than the thrownet.

Just as the dragnet fetches everything it finds in the sea, so the Kingdom fetches everything it finds in the world - not only people, but material things too. In the end, the net is not prudent or discriminating, and the parable suggests that the good, the bad, the indifferent will all end up together and stay together 'until the end of time'. There is no hurry to be making strong judgements.

The strong judgements come, of course, once the net reaches shores at the end of time, though some preliminary sorting has been done along the way. Here too, some attention to Greek might help, so we can make some prudent decisions. You see, if we assume that the English translation 'good', 'no use', (at least in the Jerusalem Bible translation which says: 'they collect the good ones in a basket and throw away those that are no use') is a simple moral reference, we may be off-course. The Greek forms in Matthew's Gospel are *kalá* for good and *saprá* for 'no use', as they appear in this parable.

Kala has more of an aesthetic sense - they choose the better looking or the more useful items, rather than the morally good (*agathos*) ones. Note that when Jesus called himself the Good Shepherd, he is *kalos* - so the term suggests that this shepherd is good not only in the moral sense but attractive, admirable.

Saprá is even clearer. It is not *kaka* (bad) but *saprá* - the sorters throw away the items that are of no use to them. It was their call - the item may have been good in itself, even if tatty-looking after being underwater, but it is of no use in this instance.

Conclusion, at least as far as today's Internet is concerned? The Parable invites another view of net-work, one which is concerned with sorting, but more on the basis of what is attractive, beautiful, what displays the 'art' of the webform, and a rejection of those

4 Digital Prudence

things which essentially are of no use to us. That is a prudent approach to the Internet.¹

Digital to-do list

- Seek balance where the digital is concerned: time is one area needing redemption in a digital world! Remember that people are analog.
- Choose software that is more geared to responding to just what I need to do, rather than software which offers more than I will ever need or use.
- Think of the language, the terminology we regularly use in reference to digital matters - showing a 'presentation' is one; 'word processing' better explains what you are doing than using the term given us by a popular vendor, and so on.
- Avoid the seduction of WYSIWYG, point and click, and instead give thought to content, logical structure, the future use of a text.... Employ approaches which enable such thoughtfulness in preparation of text.
- Think of web-work (if you are involved in producing items for the web) as art, not just technology applied.

¹Much of this interpretation I gained from Robert Farrer Capon, *The Parables of the Kingdom* (1985) Zondervan Corporation, Grand Rapids, Michigan

5 Digital Friendship

Digital Detachment came about through a pressing need and a particular experience - the need to present Free and Open Source Software from a religious and indeed, at the time, Salesian perspective for a meeting of the Salesian World Advisory Council on Social Communications, and the experience of a retreat based on Annecy and environs where St Francis de Sales was born, and where he worked as priest and bishop until he died. Essentially, I argued for an understanding of FOSS which is consonant with who we are and what we do as Religious, and urged that it be given some priority in our thinking about digital matters.

Digital Discernment continued the partly philosophical, partly spiritual reflective process, drawing on the Christian tradition but also widening that to include a thinker like Blaise Pascal, and other thinkers either directly within or at least familiar with the tradition. The intention was to develop a digital discourse that is comfortable with Christian reflection - or should it be a Christian reflection that is comfortable with digital discourse? One way or the other the two have not sufficiently been introduced to each other. Religious are familiar with the term 'discernment'. Does it sit with digital discourse as well? That was the question I explored.

Digital Prudence began to direct the discourse towards concrete issues - not so much technical ones as practical ones: keeping a balance between the analog quality of real life and the digital quality of virtual existence, knowing what standards to apply in this new situation we find ourselves in.

Now I wish to take a turn towards both the practical and the technical. Not too technical I hope, but sufficient to explain certain things that need to be understood, otherwise we simply bandy the term 'digital' around without really coming to grips with it.

Does 'discernment' sit comfortably with digital discourse?

5.1 Is friendship a virtue?

Detachment, discernment, prudence are almost certainly virtuous behaviours; friendship perhaps less so. Aristotle (*Ethics*, chs. VII and IX) does not exactly say that friendship is not a virtue, but he says it is more likely to be based on virtuous behaviour. St Thomas Aquinas (*Summa Theologica*, Q 114, Second Part) takes this up and at least admits a 'virtue called friendliness'. As the Salesian, of course, I would want to recognise that friendship was Don Bosco's practical approach to the problems of young people in difficult circumstances. I am not sure if he actually attempts to define friendship in any philosophical way, but he made it clear how important it was to be father, brother, friend to a young person, and subsequently we know that friendship is built into the language of

the Salesian Constitutions in conjunction with 'fraternal', 'brotherly' and, at one point, listed with evangelical virtues like simplicity, joy and mutual respect.

Lying behind the earlier reference to detachment was the idea of free and Open Source software. The link continues. I wish to heft a particular type of FOSS (it is usually FOSS - there may be commercial versions) into the limelight here, not just for the fun of it but to make what I think could be a useful point and a useful suggestion too. Just where friendship comes into this you will see!

5.1.1 Wiki

Since April of 2006, the Salesian East Asia-Oceania region website, *Bosconet*, has been running another website behind the scenes called *BoscoWiki*. The key term here is 'wiki', a clever technological development pretty much all the work of one man eleven years ago. Ward Cunningham was looking for a way to deal with documentation online and in particular a way to deal with frequent modifications and revisions in such a way that it would always be recorded, that one could return to an earlier version and so on. In 1995 he set up his first wikiwiki web as he called it. He took the name from an Hawaiian term meaning 'very fast', and his approach enabled any person with very little knowledge of how web sites are actually written, to write to a web site already in existence. The idea was revolutionary and in ten years has joined a host of other read-write rather than simply read-only approaches on the Internet. Wiki won the day almost immediately for its simplicity and its effectiveness. A wiki (there seems to be no convention demanding a capital 'W' except for the first Wiki, Ward Cunnigham's own!), enables a democratic peer review approach contrasting with strict editorial control; it allows ease of access and open editing in contrast to real concern for security; it allows for incremental growth in contrast to upfront all-encompassing design, and it encourages free-form content over structured content.

I decided to try it out under the name of *BoscoWiki* - and here there is a capital 'W', given another quite recent convention called 'CamelCase' (for obvious reasons!), where wiki words are often run together but separated not by space but by use of capitals. *BoscoWiki* has been moderately successful. I was a little afraid of possible vandalism in an open market, however, there has been little vandalism from the big, wide, wicked world, and *BoscoWiki* is alive and well. It is of course possible to introduce varying levels of security to a wiki, right up to the point of 'locking it down' almost completely, but that defeats the purpose.

It has been and continues to be an interesting experiment. And it is just that, an experiment. But it is also turning into a very useful experiment. I merely set out one or two pages in the wiki initially. It has grown to a considerable number of pages, in the dozens, and these are not of my making. While there is an invitation for people to initial or otherwise name their contributions, they do not always do so. *BoscoWiki* is developing into a small, local 'Salesiopedia' if I may coin the word. There is a very real digital friendship around the region being developed in conjunction with *austraLasia* the region's e-newsletter (though the link to *austraLasia* is simply a choice I made) and evident in *BoscoWiki*. At times an older habit seems to reign, where someone puts in

a comment and maybe expects the wiki coordinator to comment back. For the most part I do not do this. What I really want to see developing, at least for the *austraLasia* 'comment' page is members of the region commenting on comments of other members of the region. It only occasionally happens. But what does happen is that people enter the wiki of their own accord and add little contributions of their own elsewhere - not only SDBs, but I see that some other members of the Salesian Family have done so too.

Without making too strong a point about 'friendship' here, another development might be noted. The idea was picked up by another region, South Asia in this instance. This region got the idea that maybe a wiki might be a way of encouraging interaction for an upcoming Provincial Chapter. They have chosen a similar method - to 'hide' it (though not really, as explained above) behind an existing site, and let their members know it is there. A third is now in existence, running for the Social Communications World Advisory Council. A fourth is now in the planning stages for Volunteers working through the Youth Ministry Department. They say a wiki needs a minimum of five people for it to stay alive! Five people should not be hard to find!

Wikis are Open Source pretty much by nature. Only one requirement exists, depending on the 'language' in which the wiki is written - that the web server on which it is hosted is enabled for the kind of P2P approach necessary to a wiki (P2P meaning person to person). One cannot normally go into a file on someone's website and write on it! *BoscoWiki* is written in PHP and the hosting website 'enables' PHP and one folder which is writable. That is enough. The wiki was free to download and simple to set up.

5.1.2 Translation

Given that a wiki does not have to be totally open slather, that any degree or none of control can be exercised over its pages, a wiki is an extremely flexible instrument indeed, and it works just like any web site except that it is writable. A text on a page (rather than a text attached as a file in an email) can invite translators from around the world to 'have a go'. While this all sounds a little anarchic, my experience of wiki so far is far from that. Encouraging helpful contributions from confreres is sometimes partly a case of making those contributions more possible. There is usually very good will and intentions. Since a wiki retains a memory of every single change made, and a way of easily tracing that, a central coordinating translator could keep an eye on the work being done - or hop in and do it himself if nothing is happening on that particular page. Errors can be fixed, earlier versions can be returned to, debates can take place and so on.

Put simply, it has been possible to create a small translating community around a wiki, or something similar to a wiki. Any language pairs can be available - and to all translators, something which occasionally can be very helpful if one speaks one other language reasonably well but has at least a good reading knowledge of a third, fourth language.

So I write here not of some weird 'virtual friendship', nor am I trying to stretch our understanding of friendship beyond imagination. I am simply arguing for creative, friendly solutions to a problem. It is not a solution for large books (at least I don't think so), but it does work for many of the shorter materials we need translated as a

5 *Digital Friendship*

Congregation on a regular basis.

Digital to-do list

- Look for opportunities to work collaboratively on the web: wikis are one possibility but not the only one. Translation is an urgent need in any international group. Could there be more collaborative approaches at least for shorter items, to help with translation?

6 Digital Fidelity

Being faithful to our charism in
the digital age

We no longer live in the kind of world our founders lived in! When Don Bosco wrote his *Memoirs of the Oratory*,¹ his intention was that its contents should be for his 'beloved Salesian sons' but by forbidding its publication then or after his death, clearly had no intention that it should be widely published. Passed on by word of mouth, perhaps? Lived by example? Later generations of Salesians had other thoughts, and new realities were becoming clearer, including new possibilities for making material which they considered to be central to the charism accessible.

The ideas which follow here are not in the first place for archivists as an afterthought, nor are they a technical forethought for computer technicians. They are a current reality for any congregational member who creates material (as an original, or as a recreation of something such as in a translation) which may need a longer life than a mere 'save' or 'save as' for a short while on his computer. They are a current reality for anyone who is concerned about the accurate preservation of materials which future members and others may benefit from.

If what I say occasionally looks technical, in that I use apparently arcane symbols like XML, realise that for many young Religious today, who could click their way through to any site of their choice almost before they were weaned, these terms and realities contain little mystery. I can confidently assure you that in the end I am talking about and to anyone who enters text or images into a computer, and indicating what might be important to consider for future generations as this occurs. If certain actions require a little more technical understanding and operation, then we take the necessary decisions to achieve these, just as most of us drive a car, but seek out a mechanic if we want it tuned or repaired. The contents of this essay are really about 'driving a car' and the attitude we should have while we are on the road doing just that, driving.

A number of the references in this essay are to the Salesian Congregation - but the reader could apply the principles and situations to his or her institute.

6.1 A case for good practice

We often speak of fidelity to the charism. More often than not, fidelity (other than being a much desirable virtue, attitude, profoundly spiritual quality or however we wish to describe it) depends in practical terms on a correct reading of original texts and the subsequent annotations made by those who have authoritatively interpreted those

¹The English edition (1989, Don Bosco Publications, New Rochelle, New York) is currently out of print. A revised edition is being worked on. Digital versions are available on www.bosconet.aust.com

texts, be they individuals (Superiors General, scholars...) or groups (General Chapters, Councils...). By adopting good practice, we can ensure the most accessible use of our materials, today and in the future, by audiences we may not even have imagined, and by future applications which may dynamically recombine our materials into new resources still.

This realisation enables me to make an early point, if it is textual material we are talking about: there are two possibilities with original texts; one is that they have not yet been digitised, entered into a computer, and hence are accessible to very few people in any useful kind of way; or they have been digitised but are largely conserved in word-processed form. An alternative to the latter in a few instances is that they have been rendered for the world wide web (e.g. on www.sdb.org) but in Web 1.0 fashion. For non-technical purposes I describe Web 1.0 here as material rendered in HTML or hypertext markup language, as distinct from Web 2.0 which employs XHTML or extensible hypertext markup language. The difference is between chaotic, end-of-road rendering and structured, future-accessible rendering.

None of the options above helps with fidelity if it depends to any extent on text, because none of them is adequate for long term preservation of text - let alone of images which may form part of that text. And we need to widen the discussion to include not only earlier 'legacy' texts, but texts which are now being produced or will be in the future. A number of this latter group in fact may only exist in digital form (as in email, or material authored on the web).

By adopting good practice, we can ensure the most accessible use of our materials.

6.2 A problem that has not been or rarely been considered

I could be wrong, but I believe this problem of adequate preservation of congregational textual patrimony (and 'text' includes images and even video for the purposes of this discussion) has never been considered in these terms. We have thought about archives for printed materials, or about storage of textual materials in electronic formats, but not about the adequacy of these electronic formats to achieve what we hope or maybe believe they are doing.

Digitised text is an important component of any institution today - and if that institution has produced and continues to produce mountains of digitised materials it ought at least stop and ask itself what are the purposes and limitations of the various digital formats available to it.

We need to be clear about some terminology. By 'digitisation' I mean any process by which information is captured in digital form, be it text, image, sound or other. I may choose to offer a plain-text version of material, which is just that: ASCII or Unicode characters and nothing more. There will be no information about appearance or structure. I may, on the other hand be offering an encoded version, which does include a range of other information - if I create my text and save it as .doc in *MSWord* I am already doing this. But I may wish to add markup which offers structural information about the text, and normally *MSWord* will not do this for me, though it can. This is normally achieved today by a format called XML or eXtensible Markup Language.

6 Digital Fidelity

Microsoft has introduced a proprietary form of XML most recently, which it is seeking to offer as a separate global standard.

The problem is that large quantities of our patrimony are stored in word-processed format, even when scanned. A scanned text is usually converted into TXT (text only), RTF (Rich Text Format, a Microsoft but relatively open standard) or a proprietary format like *MSWord* (doc) or PDF (a standard with some degree of openness, but essentially proprietary). Images are retained in some image format like JPG or TIFF. None of these is suitable for long term storage. They are only partially open to adequate searching. Alternative processes for arriving at digitised texts are available. One of these is the *TEX/LATEX* format but I am unaware that any of our usual materials have been converted to that format (other than this book, that is)!

Why are word-processed documents unsuitable 'as is' for long-term storage or for adequate access? These are two issues, though related ones. Preservation is one issue, access the other. Word processing involves both content and presentation. Clearly content is of primary importance. We can rarely guarantee that presentation will render the same over different periods, or with different instruments. If presentation is important, even as important as content, then we have to find a separate solution for presentation. At times, presentation may be part of what we would want to call the 'essence' of the document, at other times not. Word processing mixes the two together regardless of their relative importance to one another. Whatever the case, it is clear that we need to preserve text according to structure of content rather than presentation (formatting) in the first instance, then find ways to preserve formatting separately if this is considered essential to the document's message. Normal word processing does not permit this to be done adequately.

*Preservation
is one issue,
access the
other.*

There are other issues. Word processing does not allow comment space other than, say, footnotes, and often our texts have received much comment which needs to be recorded. This comment may be extraneous to the original content but important nonetheless. Don Bosco published five versions of the *Life of Dominic Savio* in his lifetime, adding and removing elements each time. Today we may want to add in comment on these additions and removals without detracting from the originals. We need a format that allows rich metadata.

Another issue is that word processing tends to be proprietary and in the end no proprietary format is going to be adequate since it cannot guarantee future accessibility. This point cannot be made too strongly. Some years back GIF images ran into problems when Unisys claimed they were owed royalties because they owned the format. What if Adobe did the same with PDF or Microsoft with *MSWord*? And finally, most word processed formats are in binary form therefore ultimately not humanly readable. They will always depend on a machine to interpret the code. It should always be possible for humans to read all the relevant data and for small errors in storage or transmission to remain localised. The latter cannot occur with binary formats. Any small error may render the format unopenable. Of course, it goes without saying that digitised material needs a machine in order to be read, even apart from the issue of coding.

Let's take the best known storage format as an example. *MSWord*. It is proprietary, owned by Microsoft Corporation. Even their latest XML format is proprietary. They

could introduce changes at any time that would force any repository to convert its documents. They can alter licensing provisions at any time forcing people to open the material with their software only. Their format is binary meaning the content cannot be extracted except with *MSWord*. Their most recent XML format is a zip file and zip files are prone to data loss and corruption.

Would *OpenOffice* OpenDocument format help? Possibly. The 'ODF' ('.odt' in the case of text, '.odp' in the case of presentation and so on) is also a zip file, however, so suffers some possibility of corruption. But ODF is a much better option than .doc and may be the best and most accessible approach for now. This will be taken up further on.

6.3 Placing the discussion in the right context

The Salesian Congregation already has an overall framework, the *Salesian Social Communication System*, which looks at communications in the Salesian context as a 'communicative ecosystem'. A derived principle, then, in the document referred to, is to avoid regarding preservation of digital material from a panic, 'rescue' mentality, but as part of the information life cycle. SSCS deals with the digital information environment as an authoring environment (ANS, www.sdb.org for example) as well as the broader information environment where legacy materials are digitised, and also expresses a need to include archive preservation within the purview of Salesian communications. What follows is one attempt to explore these areas further.

6.4 Let's talk about money

It must be obvious to most that any digital preservation strategy we might adopt will cost. But if we accept that saving (temporary) and preserving (long term) materials in digital form must be part of the Salesian information cycle, then we need to ask if we can do so in a way that is economically sustainable. I will follow a line of 'low cost but not cheap' in this discussion, by which I mean that I will concentrate on solutions that are low in cost in economic terms, or even zero cost, but nonetheless effective. Solutions of this kind tend to belong to the Free and Open Source Software (FOSS) camp, and the underlying technical element tends to be an XML solution.

6.5 Preservation strategy

The best immediate strategy, it seems to me, is to convert all word processed texts of any kind to ODF, meaning OpenDocument format. This format has received recognition as an international ISO standard. ODF is a generic term. In reality it may be an .odt extension for text, .odp for presentation, .odc for calculation-spreadsheet and so on. It is a cheap process since *OpenOffice.org* (OO.o) is a free Office suite, equally as powerful as *MSOffice* and able to fully substitute the latter. It is also an intuitive and simple conversion to effect. For most normal documents the process is painless and successful. Where there is very complicated formatting like floating boxes and the like it may be

less successful. For reasons that will become apparent, this simple strategy, while not the ultimate nor complete answer, would put us on the path to a better response, and in a way that will be sustainable (economically and chronologically; I mean cost-effective, and that what we do now, if in ODF formats, will be accessible at any time in the future and can sustain further interventions and better ones later).

6.5.1 Word processing strategy is not (normally) a structured strategy

A problem remains. *OpenOffice Writer* is still a word processor. It does not, at first glance, offer a structured format. What does this mean?

At heart, word processing is about presentation, not content. WYSIWYG is the way we like to describe this way of working and it means everything to people. Take it away and people would be utterly dismayed! But for serious processing of text what we need is information about structure, not presentation, or at least information about both. In 20, 50, 100 years people may not care whether we were using A4, Landscape or Times Roman 12 point font. Even today if you want to serve up your content on www.sdb.org those details are largely irrelevant. On the other hand, the division of the document into sections, chapter, footnotes or whatever will always be relevant. It is these structural features above all which must be preserved.

In the end, then, word processing as such does not guarantee this kind of preservation, but the preservation of features which are ephemeral. That said, it is possible to do word processing in a structured way and *OO.o Writer* offers that way.

Structured material is also more adequately searchable. WP formats are flat, meaning a mere sequence of paragraphs and headings. But someone like Don Bosco did not think in flat terms! We may want to represent the nested ideas contained in something like the *Memoirs of the Oratory* (MO). One only has to read the interpretations and comments of someone like Fr Aldo Giraudo (a Salesian scholar who has studied the *Memoirs* in depth), talking about the conceptual framework of the MO to realise that a 'flat' preservation of MO in word processed terms is not adequate for anything else than reading the text. Other forms of preservation could make this text searchable according to various conceptual schema. And this kind of thing is becoming more and more important for us.

It is important to know that it is possible to do automated conversion from flat to deep structure. Templates can be designed which do this, once we are clear about the actual deep structure.

6.5.2 What are the general advantages of structured content?

A structured document contains logical elements ordered consistently. For example, a simple structure could be: introduction, topics, conclusion, list of references. When we create structured documents, it can assist the reader and also assist when reusing information.

There are many benefits to structured documents including:

- Increased usability of the authoring environment as the structure provides guidance.

- The material can contain metadata, data that may belong to comments, revision history, file descriptions and so on. This will be accessible but can be separated from the 'original' material.
- Ability to automate rendering to multiple output formats.
- Easy re-use of content sections.
- Consistent format.
- More efficient authoring as formatting is not setup for each individual document by each individual author.
- Content can be machine readable as well as human readable.

6.5.3 What other formats are available?

Most know at least of the existence of PDF. PDF or Portable document Format is one step along from word processing. It is easy enough to create - and costless if done from *OO.o*. It is cross-platform. It is excellent at preserving formatting (its main purpose). But as a storage format? It is proprietary (hence what I have said earlier applies). It is meant for rendering to paper. We may want to preserve text to be rendered in other ways. In the end PDF is not the ultimate solution, maybe not a solution at all. It does not respond to the need for structure, does not represent metadata information, and in the end it is a proprietary format.

RTF is something I use on a regular basis. Rarely now do I save in .doc, even from *MSWord*. RTF, though, is still Microsoft owned. It is much more widely accessible to other text readers and a low-level solution for normal preservation, at least short term.

There is another approach altogether, based on a markup language known as *LateX*. In fact this book was typeset with that language - but despite the various transformations that go on behind the scenes, the content is retained in what amounts to a text file with markup, thus always ensuring that the actual contents will be accessible and humanly readable even if the transformations are not applied.

6.6 And so we arrive at XML

XML tends to scare people off, firstly because they don't know what it is. Fear of the unknown! Basically it is a storage format which stores content in a structured and open way. It does not include presentation. That is handled by a separate process. Anyone who has looked at an RSS feed on a website has seen XML in action.

XML is free and open and an international standard. It fully supports Unicode hence can represent any language known to mankind (and those not yet invented!). It is based on plain text. XML will always be humanly readable. Even if some of the processes are lost in the future, the raw text is always decipherable.

On its own, XML only stores; it does nothing else. It is usually transformed by a process called XSLT. Let's keep away from the technical aspects of that. Software can

do that. But the point is crucial. XSLT can render XML in any of four or five different ways. At the very least it easily renders text as ready for web-viewing (XHTML) or into PDF for printing to paper.

6.6.1 Making XML work for us

Just as Italian is a language with many dialects (one of which made it to the top, so to speak), so is XML a general language with many dialects, some favoured over others. Maybe one of the best known dialects is *DocBook*. But another is called *TEI* or the Text Encoding Initiative (on which the Gutenberg project is based). Since structure is at the heart of XML it follows that structures which are common (e.g. For scientific texts, or for literary texts) end up being different dialects. The markup or tags which determine the XML way of writing are shared for different kinds of texts, and templates or Document Type Definitions or Schemas result, which enable us to preserve text (and later access text in useful ways) according to all kinds of structural features they possess.

DocBook has been around for some 15 years so is mature - at first sight it is difficult, but as one who has worked with it, I can say it is something like learning to drive a car. You get to a point where it all comes naturally. It has over 400 elements (tags) which follow in strict order - if they didn't, the structure would be chaotic clearly enough. Software knows the order, so human beings do not have to remember that sort of thing. However, for perhaps 90% of texts a subset of these elements would be sufficient. *DocBook* XML is then transformed by another process into the kind of rendering we desire. But for searches, no rendering is needed. Search engines can work with structured XML in its raw state.

TEI may be well-suited to scholarly work on non-scientific texts. Like *DocBook* it has a huge number of elements. It has tried to simplify things but this very act may be its disadvantage, especially for future understanding. If we render 'paragraph' as a <para> tag, the semantics of the tag are clear. If we render it as <p> as does HTML or *TEI*, then in the future, it may be confused with some other structural feature (e.g. 'partial', or 'possible' or some feature as yet unused).

There is a third approach already in use for Web 2.0 (remember Web 1.0?) websites. This is XHTML plus CSS. It's fine as far as it goes but I would not recommend it as a long term storage approach since while XHTML can be rendered in other ways (as with any XML), CSS may not be so easy to parse - CSS is presentation information.

Working in *DocBook* or *TEI* is a possibility but one that requires a little technical preparation. The software required to work in this structured environment is Open Source and Free. As a test case I have prepared a new translation (based on an earlier one by Fr W. Cornell) of the three biographies of young people written by Don Bosco. The difference between this new translation, the processes I have used and the earlier one dramatically highlights the issues I have been referring to.

6.6.2 Don Bosco's 'Three Biographies' - an example

Fr Cornell gave us the only 99% faithful English translations of these biographies that we have had. I say 99% because any translator is liable to make minor errors of translation which another may pick up on re-reading, and I was able to correct little items like 'genial' as a mistranslation of 'geniale', which really means something like 'sharp', or 'smart', or 'intelligent', despite the fact that Don Bosco was that in genial fashion too!

But there were several features of the by now out-of-print Cornell version that made it unsuitable for today and certainly for scholarship: he did not have Don Bosco's final versions of these biographies - possibly was not even aware how many versions there were; he did not translate Don Bosco's footnotes, which in some instances are almost another entire little story, and he added his own metadata, or comments, according to the purpose for which he intended his translation to be used. But it was metadata visible to the naked eye or in other words, part of the text. That data quickly dates and besides is clearly not part of the essence of the original.

The process I used was to re-author the translation in text only, in other words I did not regard any element of Don Bosco's own formatting or layout (or of Fr. Cornell's) as part of the essence of the original. I then converted this to *DocBook* XML using a FOSS XML editor. Using another FOSS software I then transformed the result into RTF (for wide availability to text reading software including *MSWord*), XHTML with CSS, so it can be viewable on the Web, and PDF so that there is an unalterable print version available, ready for commercial printing because of the PDF quality. I finally zipped the *DocBook*, RTF, XHTML and PDF versions together for ease of transmission by email or ftp. For long term preservation purposes I would not rely on zip but store the XML version. These texts in their English translation are now guaranteed for long term preservation and immediate use.

6.7 Yet another fruitful approach

I have been writing of XML, and one of its 'dialects' as if that is the only kind of markup to use. It is not, of course. There are several others, not XML based, and they too produce excellent results, depending on need. In fact it is a case of 'horses for courses', or choosing the appropriate instrument. \LaTeX markup looks nothing like XML, is rather simpler, though not as flexible, yet if you wish to produce a professionally typeset end result, it is possibly the best choice. This book was produced first in *DocBook*, but then in \LaTeX markup, and certainly the latter was easier to achieve, using a FOSS WYSIWYM (what you see is what you mean) program called *LyX*. In this case *DocBook* produced the better HTML version and *LyX* the better PDF version.

6.8 Where do we go from here?

If the above has been clear enough, then there is some urgency to us doing something about the huge amount of textual patrimony we have in word processed formats (or not

yet in anything but original state). It also becomes clear that the sooner we have a better policy for how we intend to prepare new documentation, then the better it will be for us in the future. But a problem is that both original and word processed states may not contain enough structural information, as in the case of *Memoirs of the Oratory* where only with the work of scholars are we arriving at a point where we begin to understand Don Bosco's structural ideas, stemming from his 'real' intent. Therefore human effort is inevitable to convert word processed or original material into *DocBook* or *TEI* or \LaTeX .

It is hardly conceivable that every member of a Religious Congregation is going to, or even should learn some esoteric digital process for writing up texts. What can be expected is that individuals are ready to understand some of the implications of the change from the pen to the computer, and that the institution take steps (at policy level, in practice) to preserve its born-digital or converted-digital patrimony in adequate ways.

There is some urgency to doing something about the textual patrimony we have in word processed formats.

6.9 Looking at digital preservation as a system as well as a work flow

The basic layer of preservation must include hardware (probably a normal computer), software (cf. the FOSS ideas explored here so far), and an infrastructure which supports storage and retrieval of digital material. Another level is a bit more specialised because someone has to manage the storage of materials or at least know how to get it into the right format - to operate the software and make manual changes as needed. If any of this storage takes place centrally (e.g. Central archives for a province or for the Congregation) then a third and more specialised layer allowing access, searching, distribution of materials is required. We do not have to re-invent the wheel. Major library and archival systems at national levels are already well into this discussion and have some solutions. They also offer standards. Major universities and research centres are developing institutional repository possibilities, and something like the Budapest Open Access Initiative² could be a good starting point for keeping an eye on these.

6.9.1 Recommendations - low level

At the very least I would strongly recommend the following:

- Avoid, where possible, proprietary formats for archival purposes.
- Try very hard to avoid all commercial software.
- When using *OO.o Writer* (and use it more often than not) use its styles way of writing rather than the 'Word' way of writing. This ensures the introduction of elements of structure into the XML result.³

²Available, at the time of writing, on <http://www.soros.org/openaccess/>

³In case one should ask why then do we need to go any further, if this suffices to get material into structured XML, the response is this: yes, it is XML and yes, we can do something with that later, but an ODF file at the moment has a complicated structure. It doesn't follow a *DocBook* or *TEI* or

- Store documentation in structural format rather than in visual format.
- Where we are archiving documents in word processed formats, archive a digital copy of the word processor that was used. It is not the answer to the problem, but it is a short term help for the day when.....

Essentially in the recommendations above I am suggesting that *OpenOffice* is the easiest and best low-level solution to begin with, but only if used in the structured word processing way, not the legacy *MSWord* way of word processing. The difference is significant, but this paper is not the place to describe it. It is a matter of simple procedure however and presents no technical barriers for normal users.

6.9.2 Recommendations - high level

We need to enable as many people as possible, anywhere, to work in a distributed fashion - no single person or group would be capable of digitising, converting patrimonial material into even the five languages (as used by the Salesian Congregation, for example). But why should Polish, German, Chinese members not be able to also preserve and make their own material useful?

Hence we can

1. Develop or adopt suitable templates for use in both *MSWord* and *OO.o Writer*, along similar lines to existing institutional projects which have done precisely this. As one example, The Central Queensland University in Australia has developed what it calls an ICE or Integrated Content Environment process, with appropriate templates for *OO.o* and *MSWord*.
2. Enable this content, then styled by use of such templates and a style approach to entering content, to be rendered into web, or CD or PDF formats. This needs to happen 'under the bonnet' preferably through a server located somewhere, accessible to a user anywhere in the world, or alternatively by downloading the server software onto one's computer, installing it as well as the templates, then having the material properly rendered 'on the fly'.

If all that seems too difficult, comments a little further on about Digital Repositories should encourage us - the software used by these repositories can effectively work with any of the materials we produce however we produce them. They will either be converted into some form of XML or 'wrapped' in it.

The above applies to material being authored now. What about legacy materials? We need a way of preserving these in XML. Fortunately there are already a number of approaches being developed to respond to this problem - not only for texts but for most common digital formats.

Known FOSS digital archive projects which may help us in our thinking:

other schema or DTD which is clear and has well-defined XSLT transformations into other formats. These can be written but require much technical expertise and time. The better solution, if using *OO.o Writer* is to use the template prepared by ICE which then ensures a simple, single structure.

ICE from USQ: the key here is that it is based on a relatively straightforward process for entering text into *MSWord* or *OpenOffice Writer*. The material is stored in an XML format but renderable through *OO.o* for web or PDF versions. It is arguably a system already available for use, though restricted to straight text material.

XENA: software developed by the National Archives of Australia. Another standard XML solution which wraps content (text, images) in XML and stores it for later retrieval.

DSPACE: a digital repository service developed for use by large institutions. It archives all kinds of material including audio and video. The work flow seems more geared to authors or publishers who 'push' their material. While an archive it is also a more active project for ready reference.

Eprints: may be the digital repository system with the widest install base of all. It is particularly suitable to text, perhaps less so for other items. It is an archive but also a referential system for theses, papers and the like.

A combination of ICE and XENA: The first applies to materials we are authoring for the first time, the second to any legacy materials. ICE needs little further explanation here - it works largely in the background once *MSWord* or *Writer* have been set up with the templates and the ICE server has been installed on the computer. XENA needs a little more explanation.

Greenstone: a digital repository system from the University of Waikato, New Zealand. Greenstone is fully Open Source and free, and is supported by UNESCO. Apart from its overall ease of use, both for managing and for the user, it is an attractive option in places where Internet access is poor or non-existent. The Greenstone system can be contained on a removable storage device (CD, DVD) and used locally - any collection on the storage device is available to those who have it.

In terms of action at Congregational level, I have little doubt that a wider-scale Digital Repository approach is desirable, using something like Dspace, Eprints or Greenstone (this latter being a New Zealand offering). These three approaches, all a little different but essentially offering a chance to keep a large institutional repository available at many levels of permission to the rest of the Congregation, require at the very least a skilled person to set them up - initially a person with systems operational skills to set up a Linux Apache server with MySQL, Perl and other software prerequisites. The whole system can be up and running in the space of several weeks and at little or no cost. They can also be run on an IIS (Microsoft Server) of course.

6.10 Beyond simply archiving

The lowest-level and most effective immediate solution for anyone intending to author material currently, is to do so via an Open Source XML solution. This applies to text for printing or text for web-publishing.

At the simplest level, a solution is to employ *OO.o* for both purposes, in the knowledge that the end result is acceptably well-formed XML in the first instance and can be 'upgraded' if necessary in the future, since it will always be accessible.

Finally - and somewhat obviously I hope, this essay has been prepared using the low-level process recommended, viz., authored with *OpenOffice Writer* using its 'styles' approach in every single instance (including instances of 'bold' or 'italics'). The document is XML, then, as rendered by *OO.o*, to which one can add metadata if one wishes. In fact I have taken the process a step further, using a free XML Editor, and used the *DocBook* DTD (explained earlier). This has meant that the text, once completed, can immediately be transformed into various outputs according to the desired media (PS for print, XHTML for web, .pdf, .odt, .rtf etc).

6.11 Collaboration and cooperation

We run a great danger at times that we work without real levels of collaboration in place. Call it sectorialism (a rather Italianate term), or division of labour, demarcation or whatever, but in the game I am referring to, the underlying philosophy, especially supported by the FOSS community, is one of community and collaboration.

There are many forms of collaboration. One is with those people in or beyond the Congregation with whom we can consult to learn more about the subject touched on here. A project of the kind I am suggesting requires good advice. We should also share resources amongst us. The effort to discover and adopt common standards is one of collaboration. If we have to do some things by outsourcing them, that too is a form of collaboration. Avoiding duplication of effort is yet another form of collaboration. But successful collaboration will enable and enhance and complement our many efforts.

6.12 Prevention is better than cure

An undeniable fact for any Religious today who works with a computer, be it to prepare a lesson outline, type up a homily, carry out some research project, is that at some point in the future it may be important to recall that text. If the 'some time in the future' is just days, weeks or months ahead, then there is usually little problem. Beyond that, clearly, some steps need to be taken to ensure longer term preservation.

The problem may be partly one of organisation:

'Now where did I save that....!'

or it may be one of hardware change:

'I no longer have my old laptop'

or it may be one of software obsolescence:

'Funny, but I can't seem to open that Word '95 file any more'.

*What should
I be doing
now, in the
light of
technological
changes...?*

What follows addresses all of these problems, but is more concerned with the institutional impact of the problem:

'Now, can we still obtain Don Bosco's fifth edition of his *Life of Dominic Savio* in a text form that also contains notes on changes he made over the five editions'?

Of course we can't - he had no capacity for or interest in that sort of thing! Most importantly, however, what follows takes a preventive approach - what should I be doing now, in the light of technological changes, current possibilities, and foreseeable needs?

6.12.1 'Binary' business

We should begin with some simple definitions and realisations. Without probably realising it, most of us work with text in a way that ends up being 'binary'. A binary text document is usually created in a word processor or as the result of transformation from another format. *MS Office* is the usual way this is achieved. For long term preservation, *MS Office* documents are not suitable unless transformed into a format which conforms to open standards, such as Unicode. Rich Text Format (.rtf) is an open Microsoft format, but it would still need to be converted to a fully open format for long term preservation. PDF is a common transformation but it is not an open standard. Anything proprietary is not an open standard and cannot guarantee freedom from software obsolescence in the future.

Would 'plain text' help? It depends what we mean by 'plain text'. Even a 'text only' document may not be really so! A text may appear to have little formatting, but the code underlying the text contains much that is irrelevant to the contents and more to help with presentation and printing. It continues to be dependent on the software which produced it then. Plain text in a simple text editor is more likely to be what it says it is - plain and unadorned.

6.12.2 OpenDocument

With the release of its *OpenOffice 2.0* series, *OpenOffice* embarked on a truly open standards highway (note, it has not arrived at the final destination) to the problem. It adopted the OASIS OpenDocument XML format as its native format. The format guarantees independence from any hardware platform or software application. If it is necessary to preserve binary text in its binary form with presentational markup, then *OO.o*'s zipped form is preferable to proprietary formats. There are filters which enable direct export as *TEI* (Text Encoding Initiative) XML. If no intellectual content is lost in this conversion (the choice of fonts could have a semantic importance for a document), then the result is suitable for long term preservation.

6.12.3 Simple conclusion

In general, no proprietary format is suitable for long term preservation, so the solution is simple. If you wish to have long term preservation in mind, the choice of an Open-

Document format is the one to make. Currently this can be achieved by word processing programs which are cross-platform like *OpenOffice* or *Abiword*, or ones particular to a certain OS like *Kword* for Linux. They are all free. Of course, it is possible to convert closed formats to open formats, and in practical terms this is what we need to do most of the time. I am expressing a more ideal situation here (and one which is entirely possible if one decides to do it) by recommending the preparation of text as 'open' to begin with.

6.12.4 Will images follow suit?

Probably! Images retained in an OpenDocument format will certainly 'follow' suit', by which I mean they will be suitable for long term preservation. Of course a 'document' today may contain many formats including sound and video. That becomes more complicated but there are solutions. For the purposes of this paper I am dealing mainly with the issue of text and occasional images.

While on the subject of images, note that there are open standards here too. A TIFF image is an open standard. A page saved as .tiff, even if text and images, will ensure that material is always accessible. It won't help for sound or video, of course.

6.12.5 Getting a little more clever

For most people doing mostly ordinary texts, something like *OpenOffice* is the easiest way to go and the earliest preventive step to take. But once we begin to understand that XML is one secret behind all of this we can get much cleverer and take more valuable steps still. In certain places - where scholars are at work, or where we want to ensure access to key documents of the Congregation for many people - we need to take these cleverer steps. For example, it is not so terribly difficult to adopt one of the well-developed particular approaches to XML designed for specific kinds of documents. *TEI*, already mentioned, was developed as a Document Type Definition (meaning it has strict rules as to what follows what in XML markup) for literary texts. *DocBook* for technical texts. RDF is a markup for bibliographies. A *Firefox 2.0* extension called *Zotero* enables one to record bibliographical material gained from the Web and export it as RDF. DiVA is a scheme developed in Scandinavia for working with theses and the like - one adds in a template to *MSWord* or *OO.o Writer* which ensures the material is converted to the DiVA schema. Or, if what we want at the end is a typeset version, which also keeps the content in what is still effectively a text file therefore always accessible, we could use the L^AT_EX approach described a little earlier.

6.12.6 Uh, oh! Why didn't we think of this earlier?

Is there a digital 'cure' for the thousands of documents already produced before anybody thought about this? Could we recuperate the five editions of Don Bosco's *Life of Dominic Savio* with notes on the changes? Fortunately yes, so long as someone has typed the five editions into a computer, or accurately scanned them in. Nearly all the major archival institutions in the world have confronted this problem and have all come up with a similar solution, though national pride determines they do it all a bit differently! The good news

is that they all agree on one thing - open standards. Even if their processes are nationally distinct, they can all have access to everyone else's documents theoretically - otherwise there wouldn't be open standards!

One of the simplest solutions is to 'wrap' an earlier document, provided it has been rendered digitally at some stage, in XML, also converting the original into XML. The software to do this is free.

One should not leave this discussion without mentioning another important feature to help a person find a document in the future. The answer must be fairly obvious - if a document has an absolutely unique name, then given the ability of today's search engines (Google, for instance), it can always be found! We are, by now, reasonably aware of what a URL is. Things that start with `http://www.` etc. It means Universal Resource Locator. The 'Universal Resource' bit is the key. A resource that can be located anywhere in the universe! That means there cannot be two the same. As well as URL there is URI, URN.... no need to worry about the technicalities here, but universal resource indicators or numbers are part of the deal too. There are systems out there (developed by places like Uppsala University in Sweden) which one could look at if it comes to determining a suitable URN system for a Congregation. In the end we have to determine that we have a naming system which will survive the future. We then need to take some simple steps. If a text document has images, sound or video attached, it makes sense as a preventive measure to save the document with separate reference to these other formats. These matters will be taken up a little further on in 'digital persistence'.

The biggest problem as I see it is that so much documentation is currently preserved in proprietary formats, and very few people are aware that this creates any preservation problem. *MSWord*, arguably the most prolific format in which documents are created, has got to the point where it cannot open its earlier documents (possibly because its creators do not want to, thus forcing users to upgrade). Alarm bells should be ringing, in this case. We need to look, then, at what we do now as we create documents, as well as considering what we can do about documents already created.

6.12.7 Action

What has been said in a simple way is intended mainly to alert people to a very real need for action. The action has to be local and global. Local - for every member to note, global - for the Congregation to take some formal steps to recognise the issue, even if that formal step is initially just one of making some public statement along the lines of the information offered above, and a handful of clearly stated principles.

6.13 Systematic approach to creation, storage, distribution of digital text

In very simple terms, an organisation such as the Salesians of Don Bosco (but feel free to substitute that for any other religious institution), which has an almost incalculable amount of material now in digital form, or which seeks to put more of its material into this

form, requires a systems approach to creation, storage and distribution of this material.

As the Congregation has a central library or a central archives for (mainly paper-based) items, so an equivalent repository of digital material may be called for - the equivalent being a central server which at least stores and is able to distribute digital objects. I say 'at least' because in the digital world we also take account of the creation of material in the first place as a possible element in 'the system'.

In this discussion an 'object' may in fact be a collection of materials which are closely related as, for example, the presentation of messages which include text, images and video. Everything related to a single presentation can effectively be combined into a single digital 'object'. You can understand 'object' as conventional object, a book or image, but it may also be complex, compound or dynamic as in a video.

The Congregation requires a suitable digital object model for storing and disseminating material. What I have previously written about the creation of material with long term preservation in mind is applicable to what follows and provides at least some basic concepts - the use of XML being one of these, and an Open Source, open standards approach being another.

6.13.1 Choosing a system

There are a number of systems in place around the world based on these concepts, and for the most part developed either by universities or by large national archive requirements such as those of a national library or government archiving organisation.

The Congregation may require a system which focuses on more than archiving. Some existing systems widely in use worldwide and likely to offer possibilities for the Congregation are as follows: DSpace, EPrints, Greenstone.

Three of the systems mentioned earlier in this chapter have arisen from the academic community. Let me offer a low-level opinion about the three based on some personal research and use.

DSpace: the focus is long-term preservation of research materials and it is for large institutions. The code base is complex and any re-architecting of this to suit our needs is probably not possible. It also works on Linux. While Linux is a good route, it is not a route that everyone is prepared to take. DSpace runs from a Linux Apache server. However, I understand that DSpace can be set up on Windows also with a little technical know-how. There seems little doubt that all things being equal DSpace is a solution. As it works best on Linux, the solution normally involves setting up a Linux server with space dedicated to a large scale repository.

EPrints can be easily customised. Having said that, I have found it beyond my capabilities to set up properly on a trial basis. It needs a systems person with more skills in setting up the Apache server and database materials required. The software is free. The system can be set up on a web server. But EPrints too is based on Linux and Linux (or UNIX) only and there are no plans for a Windows version.

Greenstone: the solution I have personally taken up with a view to archiving and making available large amounts of material held on www.sdb.org. It is completely Open Source, and even a relative novice like myself can come to grips with it. It can be downloaded in minutes and set up on a single computer with either a Windows or Linux operating system. It can work, even in that limited single computer fashion, as a small server, though with limitations, or it can be set up on a major server, as I have done (Apache in this case) and made available to the world. Greenstone converts text (including text only, images, video, sound....) to a form of XML for rapid viewing and of course for long-term archiving. But it also retains the object in its original form. In this sense it offers the best of both worlds. One additional advantage of Greenstone is that it can export a collection to CD or DVD, thus making a collection available to people who do not have Internet access. The CD opens automatically into a browser which is self-contained on the CD.

6.13.2 The point of it all

Until recently the only possibility we have had for both archiving and presenting digital material of the belonging to the Congregation has been to place materials on www.sdb.org in *MSWord*, RTF or other (PDF) version. The quality of the archiving process is much open to question as also the accessibility of the material. The Greenstone software, now adapted into a Salesian Digital Library (SDL) has proven that it is possible to offer material in up to 40 languages (including the facility of navigating in those languages) and to guarantee that they are digitally preserved as well as accessible.

Digital to-do list

- Think 'open standards'.
- Learn what the most common formats mean, and their implications (.doc, .txt, RTF, PDF, XML, but then similarly for image formats, sound formats....).
- At an institutional level, consider a digital object model for storing and disseminating information.
- At the most practical level, choose to save text documents in RTF or even TXT where possible, instead of .doc, as a step to make documents more open and longer-lasting.
- Think 'metadata'. A digital object always has a context: author, date, purpose...

7 Digital Persistence

What is his name or the name of his son, if you know it? (Prov 30:4)

Neither Aristotle nor Thomas Aquinas agree that persistence is a virtue, but they do see it as a condition for virtuous behaviour, part of perseverance. A virtue, after all, is not a virtue for a human being until it becomes habitual. Nevertheless it may be time, in our digital world, to suggest that persistence is a digital virtue. What follows explains why. It takes up the issue of what we call a digital object - for example a file, an address. It also raises the broader issue of the relationship between things - as indicated by the term 'ontology' today, when speaking of the semantic web. We return once more to the importance of metadata.

7.1 Semantic web

We hear the term 'semantic web' being tossed around these days, but are perhaps not sure what it refers to. Leaving aside all technical descriptions and definitions, we know that from time immemorial philosophers have sought universal categories for classifying everything that is; more recently lexicographers have sought universal terminology for defining all the words we use; a tiny subset of the modern world, librarians, have sought universal headings (think of Dewey the philosopher who gave a them a ready-made system) for storing and retrieving everything that has been written or recorded in some way. The semantic web is another step along this path, as it attempts to integrate all the world's knowledge in the context of the Internet, and therefore seeks universal approaches for dealing with it.

While we have not arrived at any endpoint in the semantic web, we have made strides along the road. Google is an example of one stride. Again, without being too technical, it is possible to understand a little of how this semantic web, this linking of meanings across cyberspace works, and what the implications might be for us, especially if we are members of a group which thinks globally, such as do Religious Congregations or groups of consecrated life.

Implications of the semantic web for groups which think globally.

The semantic web employs three sets of developing technologies to achieve its aim:

- A name and address technology which is known as URI or Universal Resource Identifier.
- A coding technology, a syntax which is known as XML.
- A set of statements about and which relates entities to one another, known as RDF or Resource Description Framework.

These three technologies are tied together by a science which is called ontology, though it is not quite what the philosophers of old thought of as ontology. In the context of the digital world, an ontology is a hierarchical or connected set of nodes showing the relationships between entities - perhaps an excellent simple example of ontology at work, for the English speaker at least, is *Roget's Thesaurus*. Other languages may call it a dictionary of antonyms and synonyms. Essentially it is an effort to organise the names and descriptive terms for everything that exists.

7.2 The world wide web - a universal repository

The glory and the problem of the world wide web is that it now has to deal with just about everything! It is an incredibly immense alphabet soup, but where once upon a time a single letter in such a soup would probably remain hidden, now that is no longer possible. Because of the development of name and address systems, that letter can be found! Usually! The problem is not so much that of not wanting to be found - in the end an object can disappear or all traces of its name and address can be expunged by human effort. The problem, rather, is when we would dearly like an object not to disappear, to remain traceable, usable, citable but we fail to take appropriate steps to ensure that this happens, or are unaware that we can take such steps or, perhaps worse still, do not realise that in today's digital world, the weight of probability is for enabling a digital object's persistence into the future rather than not.

The lowest level of this problem - and everybody's exasperating experience if they have used a computer - is to have typed up a document but to have forgotten to 'name' it or 'save' it (same thing, ultimately). One error, human or digital, and it's gone, forever!

This is not the problem that this chapter is about. Nor is it about the various possibilities for digital filing systems, except perhaps to say that we should never take things too much for granted in the digital world. We have never felt a need to question the folder system that is common, say, in Windows. But if one has a Gmail account, one is already aware that Google has a different philosophy, with a view to never (at least in theory) needing to delete an email because it is always traceable. No need for folders and complicated subfolders in such a system. It is not folders as such that are important. Instead, once one realises that the world wide web is really a gigantic collection of icons showing the form of something, indexes pointing to where things are and symbols representing something, then the issue becomes managing these icons, indexes and symbols in sensible ways.

7.3 UR....

The best known form of name and address on the Internet today is the URL. Unfortunately, it is, for many, the only known form of name and address, and here lies part of the problem.

URL stands for Universal Resource Locator. 'Locator' suggest geography or at least something geospatial, and that is correct. It ends up being a precise point in time and

space - a point that can change. It may change through poor administration, or it may change by necessity - I may wish to reclassify an item in a different folder, or I may have relocated it to another machine - or my ISP may have changed. But the end result is what is called 'link rot'. The famous '404 - File not Found' message.

What many are not aware of is that world standards organisations have been aware of the problem virtually from the outset, and have come up with important recommendations and clear descriptions of the technology at work. For example, a URL is a subset of a superordinate term URI, Universal Resource Identifier. The first recommendation at a standards level is that we cease to use the term URL and instead use the term URI - even when referring to what we know as perhaps <http://www.mickeymouse.com>.

If URL is a subset, are there others? Certainly. One such other is URN or Universal Resource Namespace, and there are systems which use this namespace. Anyone who has worked with XML and doc type descriptions or schemas will be used to namespaces. Those who are already accustomed to print publication will know of ISBN or ISSN numbers. These can be transferred to the web and incorporated into name and address. At that point they are a URN. Immediately obvious is that these 'names' are not idiosyncratic. There is some central registering or naming authority involved, just as there is in the case of the DNS (Domain Name System) system which gives us country codes or the like at the end of a URI. One applies for a domain, or one applies for a 'name' according to a central registering authority, and that authority guarantees persistence, namely, that it will not disappear soon off the face of the earth.

Which raises an important question - how long is persistence? As much as one would like to answer 'forever', that is not realistic in the digital world. Good Lord, that world has only existed for twenty five years or even less! So would it be reasonable to say that, just for now, 'persistence' means at least another twenty five years? And we all know of 'temporary' solutions that have lasted for a century or more!

There are other systems. One is called *DOI* or Digital Object Identifier. Another is known as *Handles*. Yet another is called *ARK* or Archival Resource Key. The reality is that each system responds to particular needs, and perhaps no system answers all needs, but all are well-established and none is likely to disappear soon. Nor do they necessarily contradict one another, indeed, some of them actively cooperate with the other.

So where does that leave us, and why worry about it anyway?

7.3.1 Why worry?

It is simple enough - we either want to ensure that digital 'stuff' (objects, resources...) is available to others besides ourselves or we may even have some responsibility to do so. In that case we would be silly not to employ the methods that are offered. Not to do so will almost certainly result in frustration for users.

7.3.2 What do we worry about?

So much depends on the level of importance of the material, but in general we need to think of the naming system. Individuals always have some sort of naming system for

files on their own computer, but it becomes another matter when we move those files to a place for public accessibility. A congregational website or digital library definitely has to think of the system it employs.

Computers can work with cyphers that leave human beings speechless! Hence a computer has no difficulty at all with a naming system which says that a file is 1_46_82_12.rtf. The only thing a human being can be happy about with such a file is that the computer will find it, but the 'name' as such has no meaning. Hence, where possible, some other form of coding which also has sense for human beings is desirable. This may have to be a set of agreed-upon codes, such as the internationally accepted two letter language codes (en, es, it etc), or sector or department abbreviations or other agreed ways of slicing up the congregational pie!

It goes further than this. The principle at stake, in an open distributed system such as the world wide web, is identification, and that means a unique, global name, and an address that is traceable. Every object that someone might validly want or need to cite should have an unambiguous address.

While it is true to see that at base this is an administrative and therefore human problem, it is also true to say that there are systems out there to help. But even the best system or technology in this instance will fail if there is not the human commitment to maintain it. You can see how 'persistence' then really is tied to human perseverance.

7.3.3 Establishing a persistent identifier for external purposes

The crux of the matter is to establish a persistent identifier for a digital object. A digital library has already gone a considerable way in this direction - perhaps even a sufficient way. It can be assumed that a document or object contained in such a library is unlikely to be moved around, and even if it is moved around internally, most digital library systems have an adequate search apparatus to ensure the user will find the object. It may be a different matter if there are several versions, or progressive developments of the same object. Then real care needs to be taken in naming, or with metadata.

We have already said that, in general, reference should be made to the superordinate term URI instead of URL, the latter being restrictive. What of the various systems? Since each has its good points and is generally regarded as adequate, could there still be an argument for one over the other?

As this essay is part of a series which began with a plea for openness, accessibility, we could apply similar principles here. Cost might also be a factor. At least one of the systems, *DOI*, costs to register with.

The systems employed today abide by at least the following criteria:

- Uniqueness: the name will never be assigned to a second object.
- Persistence: the system guarantees that within its power to do so (the human element is another factor, however) the object will be traceable into the future.
- Scaleability: can accommodate future growth, presumably massive growth in this area.

- Legacy: can incorporate existing well-developed systems such as ISBN.
- Extensibility: can be extended, developed in its own right.
- Independence: will depend on a naming authority.
- Resolvability: the resulting URI will resolve to an actual address.

But beyond those criteria, there are clearly others of a very human kind. We are best accustomed to the HTTP protocol. A system which uses this protocol will be easily recognisable and usable by ordinary folk. A scheme that is already registered and useful will be better than something completely or rather new. Again, http-type name and address is acceptable. This URI system is well-defined by the RFC3986 global standard, meaning that nations around the world all accept it, and follow its provisions. RFC comes from Request For Comment, which began as a simple web page of requests for comment and grew into a standard. The scheme is described as a scheme name (HTTP...), a domain name (e.g. www.myweb.org), a path - we all know what a path is in web terms - it can be a full absolute path, or perhaps a relative path, depending on circumstances, the latter being more persistent if it can be resolved, since absolute paths change over time.

Are we back where we started? Yes, unless we resolve (pun intended) the possibly changing locations and even names, somehow.

A possible and recommendable way to ensure that a URI remains traceable is PURL or Persistent URL. More information on this can be found from <http://purl.org>. The advantage of using this redirect service (which means first of all registering for free as a member then including purl.org as part of the URI) is that PURL never changes and it offers services which encourage the registered body to maintain other persistent elements of name and address.

7.4 Think digitally, act locally

We have already said that the real issue is human commitment to keeping name and address choices as long term as we feel they may need to be. Technology is an aide to this but not an answer. Consider it this way however - if you need to refer to an object (digital) outside your own management domain, then unless it is 'persistent', you have a problem. Now consider: how 'persistent' do I need to be for myself, for those who are associated with me or depend on me? And finally, how desirable is it that digital material I am responsible for be 'persistent' for a wider audience? You might be surprised how often you need to be 'persistent'! So it is a case of developing a mentality from which certain actions flow.

The point is that while we all recognise the ephemeral nature of digital bits and bytes, we have not always taken sufficient action to deal with that. Digital memory is an issue in today's world, and one which impinges considerably on large organisations which may be in danger of losing that memory in the short term.

*How
'persistent'
do I need to
be for
myself, for
those
associated
with me, or
who depend
on me?*

7.5 Moving on to metadata

If it were just about file names and URI's it would be so much simpler, but it is not. Though the term 'metadata' is relatively new (we can locate a Metadata movement to around 1995), it has gone ahead in leaps and bounds, especially in connection with the common XML syntax which lies behind so much digital activity today.

What are the implications of this move towards metadata for the ordinary person?

Just as a journalist asks questions like who, what, where, when, why, how about an event in order to give us the full picture of an event, so, in the digital world, we have the capacity now to indicate more than the contents of a digital object in itself, and this 'more than' may well be essential information for digital memory, but the use of metadata is also crucial to the status of a digital object 'floating' in cyberspace. In simple terms metadata is information concerning the content - its context, the author, revision number and so on.

Without metadata, a digital object is really a kind of junk object amongst 600 billion (or is it more?) other objects out there. Lack of metadata lessens the likelihood of others finding the object if we in fact want others to find it. Metadata has much to do with search engines. At the moment, people who put web sites together tend not to think about metadata much - which is one reason why a search engine on a website may not function very well. The best it can do is do a full text search (where there is text). And for non-text objects, well, it is more difficult still to search for them other than a file name.

If Tom is immaculately dressed but never bothers to wear shoes, or Mary has built a beautiful house but couldn't be bothered putting in a front door, then Tom and Mary are shoe less and clueless in the kind of western society we live in which normally requires shoes and doors. Think of a website without metadata as shoe less and clueless!

Once again it is a question of mentality rather than going straight for some technological solution. But there are bodies out there to help.

Just as there is RFC and other standards bodies in this general 'persistence' area (and we are suggesting here that metadata is a persistent element), so with metadata - METS, or Metadata Encoding and Transmission Standard.

There are five major sections of a METS object: descriptive metadata (perhaps the best known is Dublin Core), Administrative metadata, (preservation details, rights...), File groups (TIFF, thumbnails, PDF...), Structural (Table of contents, intro, chapter 1...), Behaviour (e.g. reference to a javascript...). Some of these elements may already be taken care of in the authoring process. If one is using a word processor like *OpenOffice Writer*, for example, for structured authoring, then some metadata will already be in place.

Standards of this kind are actively integrated into digital depositories or libraries, but not necessarily into websites. Food for thought. A website with metadata will be easily searchable. Alas, few websites began this way, and the task ahead is almost beyond thinking about - except that it needs to be thought about. At the very least, Dublin Core is a good start for anybody preparing a digital object. It is Dublin Ohio, not Dublin Ireland we are talking about - an internationally agreed set of 15 labels with which one

What are the implications, for the ordinary person, of the move towards more metadata?

can describe almost anything. It was drawn up for non-specialists, so contains terms as simple as Subject, Title, Publisher, Date.... When a group needs something very much more specific (say you were collecting only images) these additional labels are normally mappable to the Dublin Core, which is why it is called a 'core'.

Metadata is no utopia. Indeed, not only would it be impossible to describe everything about everything, but we already have some decidedly unpleasant results based on metadata! Why is your spam box full of spam related to 'Re: The information you requested', or full of a gargantuan list of empty buzzwords? Metadata misuse. But because people lie, are lazy or are stupid, and this leads to false, useless or no metadata at all, it does not mean that we should cease and desist from providing metadata.

7.5.1 Metadata when I thought there wasn't any

Do you want the good news or the bad news? Of course, the good news first. If you are, say, an *MSWord* user, then part of your metadata problem is already solved! Metadata is regularly embedded in an *MSWord* document (or any other *MSOffice* object).

File-Properties-General/summary/statistics/custom/contents: these will tell you what is already embedded. Or mouseover an edit when 'track changes' is turned on. There is also free metadata viewer software downloadable from the web. The bad news here is that this metadata is being provided without the knowledge of the person (usually) who is processing the document. The lesson is that care needs to be taken to ensure that no unauthorised disclosure of privileged metadata takes place. This is an issue to be taken up in a further 'digital virtue' to do with governance.

In case you thought metadata was something just for technical types, think again. Think of the millions who use social websites like *Del.icio.us* or *Flickr*. The tagging process they employ is metadata for the masses, and an example of the semantic web working for us.

7.5.2 Taking tagging and metadata and classifying in another direction

The mention of sites like *Del.icio.us* is a reminder of the distance we have travelled since this essay began! We began by recommending a quite systematic approach to naming and addressing to ensure persistence of digital materials. But social tagging, or 'folksonomy' as it is also called, seems not to be a system at all. Indeed, I may 'tag' an image of a cat as 'cat', or 'my.favourite.cat', or 'meow'. On the type of website in question, my tags are aligned with everybody else's tags. This distributed style of classification then begins to discover shared chunks, and new classifications can emerge. In a strange sort of way, out of free tagging and flexible, open taxonomies, elements of organised knowledge emerge.

This is not to suggest that the best approach to digital persistence is a free and open 'social tagging' one. Not at all. In fact, there is one piece of good news in particular for religious communities - they tend to use a more controlled vocabulary when it comes to their products (documents and websites). Controlled vocabulary means that a concept is handled by one or more agreed-upon terms rather than out there for 'open tagging'! Meaning that the members of a particular group tend to have a set of well-defined terms.

If they do not, it behoves a group to do some work on its terminology to arrive at this, because a controlled vocabulary plus a defined metadata scheme together make up the best scenario possible.

And then there are blogs! Current conventional wisdom seems to consider blogs as throwaway material. But of course an historian would never think so. While there are not too many Congregational websites running blogs or podcasts, there are any number of members of Congregations who run their own blog or offer podcasts. Blogs have begun to move from the margins to the mainstream in the digital world, with implications for publication and news media. Blogs are becoming digital portfolios, public identities. While there is no real persistence framework in place for blogs as yet, this 'digital fluff' does hang around, and it would be better that if it is going to be remembered, it be remembered well.

It would be better that if it is going to be remembered, it be remembered well.

We will see, in the future, efforts to provide a persistent framework for this kind of material. It is useful to be aware of just how broad the field of 'persistence' in digital matters is.

7.5.3 But back to metadata and websites again!

'At the moment, people who put web sites together tend not to think about metadata much ..': that might have seemed a throwaway line, but it isn't. We need to return to it. The difficulty lies not so much in a faulty mindset on the part of those who put websites together - or at least may not - but in the reality that a dozen years of development of this kind of thinking in general is not a long time and it has yet to seep down to websites. Not every website needs this approach, but certainly one trying to reach out to a thousand or thousands of people would benefit.

For a website, the introduction of metadata for search purposes is tied in with the general principle expressed in an earlier essay of separating content from presentation. We are probably talking here of a complete makeover for existing websites, and that is some task.

The key to it all is a metadata mentality which enables us to define the core metadata (the central organising ideas of the Congregation, enterprise) and the supporting metadata - content types, content itself perhaps. This supports the core metadata.

There could be value in considering relationships between content items as well, since this is also capable of inclusion in this approach and makes for much better searching. Once we begin to talk of relationships between concepts we are fully into an 'ontology' of our website (or of our Congregation or group). Because all the concepts are discrete and important, and because the all the relationships between them are semantically structured, we can infer a lot of information from an ontology that one just can't from crawling the links on a series of web pages. What makes a formal ontology more robust than a thesaurus or faceted classification is rich semantic relationships, semantic restrictions on relations, range, domain, cardinality, logical sets, inverse relationships, etc.

We may be pretty much clear on the core concepts in the ontology. That is a good start. The relationships between them are a bit tricky but not unclear - it is just that we have not always thought much in terms of these relationships. The website may already

associate content with the core concepts. Now it is time for metadata.

Metadata may be deployed in a number of ways:

- For embedding the metadata in the web page META tags in the HTML coding of the page.
- As a separate HTML document linked to the resource it describes In a database linked to the resource.
- The records may either have been directly created within the database or extracted from another source, such as web pages.

Metadata as a technical issue rarely appears onscreen, only in the source code or in ways indicated above. It usually refers to the keywords used to describe the website, placed in the metadata tag. Ultimately it is metadata that webcrawlers (search engines like Google) go looking for.

But if we consider metadata to be a way of writing for websites (long before we encode that in HTML), then we have to say that 'metadata' is everywhere on the screen! The words which are hooks for the quick-scanning reader/user are really metadata!

Here below is an extended example of how a Religious Congregation might develop its (technical) metadata set for its web page, using the Dublin Core approach - which makes sense because it is a universally accepted standard. Here the example is in English, and taken from the Salesian Society - we can add the equivalents of the other languages of the web site. This example is placed in the 'head' section of the web page.

```
<html>
<head>
<title>SDB Home Page</title>
<meta name="DC.Title" lang="en" content="Main Salesian items of interest - Home
Page">
<meta name="DC.Coverage" lang="en" content="Italy">
<meta name=" DC.Creator" lang="en" content="Direzione Generale Opere Don
Bosco, Via della Pisana, 111, Roma 00163, Italy. coordinator@sdb.org">
<meta name="DC.Date.created" scheme="ISO8601" content="2002-05-01">
<meta name="DC.Date.modified" scheme="ISO8601" content="2007-04-01?>
<meta name=" DC.Description" lang="en" content="The Salesian Congregation's
central website often referred to as a portal, expressing the 'face' of the Congregation
in cyberspace and linking Salesian works and confreres, members of the Salesian Family
worldwide.">
<meta name="DC.Format" scheme="IMT" content="text/html">
<meta name="DC.Identifier" scheme="URI" content="http://www.hypermedia.it/">
<meta name="DC.language" scheme="ISO 639 2" content="eng">
<meta name="DC.Publisher" lang="en" content="Hypermedia">
<meta name="DC.Rights" lang="en" content=" http://www.sdb.org/copynote.htm">
<meta name="DC.Subject" lang="en" content="SDB; Salesian Family; Salesian Con-
gregation">
```

```
<meta name="DC-REL.Subject.Category" lang="en" content="Salesian Congregation">
<meta name="DC.Type.category" lang="en" content="home page">
<meta name="keywords" content="="organization; who are we; Resources; Information; Don Bosco; Education system; Departments; Regions; Provinces; General Council; Rector Major">
<meta name="description" content="Salesian Congregation web portal"> </head>
```

This works best for an XHTML-CSS produced site. Framed sites cause problems - the spiders and webcrawlers may not be able to locate the metadata file(s) correctly.

It may be worth noting here that building a metadata-based website in this way is another direction from the CMS (Content Management System) website approach as we currently know it. It may be difficult to reconcile the two but that does not mean that it is not being attempted - it is.

By way of being practical, it is possible to both view and edit metadata for any website online (also locally on one's computer) with free and Open Source software. If one has easy access to the Internet, a permanent connection, then the easiest approach is to go to <http://www.ukoln.ac.uk/metadata/dcdot> and enter a particular web page, then work from there. Clearly one needs to apply this process to every page in the website.

Do we hear an objection, 'but this is just an English language thing!'? Here we need to make a distinction. In short, speaking of Dublin Core, that is not true. The DC set already exists in a range of languages, so people can work with DC even if they do not understand or write English. One can repeat any of the fifteen DC elements, so if a site is in five languages, five repeats, using each language in turn. But we cannot ultimately overlook the fact - which has not altered in the short history of the web - that web syntax (HTML, XML, RDF...) is in English and that search engines are working largely with English.

Is all this just an English language thing?

7.6 To conclude

After all this, where do we stand? In practice, what should we be doing? There are some practical hints throughout the essay - be aware that there is an issue, take certain concrete steps like sensible naming of digital objects, introduce metadata wherever possible to make searching more effective.

The essay, remember, is part of a series which is aiming to build up a positive, 'virtuous' framework for dealing with the digital world for the benefit of those we minister to and who will follow us. At the centre of this framework, other than the human being, is the digital object itself. A good digital object will be persistent - that is, it will be the intention of some known individual or institution that the good object will persist and that it will endure over time despite changing technologies. This includes elements of persistence that have received much earlier mention in this series - for example that the object is digitised in a format that supports intended current and likely future use, that it will be exchangeable across platforms. Then everything we have said above can apply: that it will be named with a persistent, unique identifier that conforms to a

7 *Digital Persistence*

well-documented scheme, and that its location will be resolvable with reference to its identifier. It will have and be associated with metadata, descriptive and administrative.

We have much to think about.

Digital to-do list

- Is it time to take another look at the notion of 'persistence' with all our digital material? This means in practice seeing that an address is long-lasting, which means in effect that it is unique, global, always traceable.
- Work on terminology of the institute or congregation to ensure agreement on the meaning of terms (an ontology of the group), including agreed translation of these terms into the principal languages of the group. This is a specialised activity which may need the help of professionals in the field. It is crucial to good public image amongst other things.
- Return once again to the idea of metadata, so important for accurate searching, identification of material.

8 Digital Governance

Here I establish a case for the kind of governance in the context of religious life that takes account of the digital. I resist the temptation to begin with eminently practical issues like cellphones going off during a community conference! In the end that is more an issue of good manners than anything else. Nor do I want to begin by writing of the need for evangelisation in the digital era - or ways to evangelise. That too is important, but it is not our starting point. Instead we need to consider what the digital era has begun to mean to the way we live our consecrated lives and what this means for leadership in religious life.

The essay offers some practical approaches, lists a range of issues, and provides one example of a Congregational leader who has reflected on the situation and provided an analysis.

8.1 Governance and virtue

In an earlier essay concerned with the notion of 'digital friendship', I was preoccupied with a very much practical issue - collaboration, working together by digital means. I passed quickly over friendship as a possible virtue, opting for the idea that someone like Aristotle saw friendship as something likely to be based on virtuous behaviour, or admitting with Aquinas that friendliness might be a virtue. What may have been missing, something members of consecrated life may want to say, at least intuitively, is that 'virtue' is not just something personal - it touches on the community, the group. Any consideration of friendship leads us this way. Aristotle's account of the best friendships emphasises mutual interest, common activity. Could it be that some virtues are best exercised in 'political' activity (by which I mean, for our purposes, 'community' or the governance of community)?

In the *Nicomachean Ethics* Aristotle indicates that the virtues he describes are meant to be exercised in governing states. One such indication occurs in his statement that "the actuality of the practical virtues is in political and military activity" (X.7.1177b6-7). He goes on in the next chapter to contrast the life of practical virtue with the contemplative life: the former requires more external goods than the latter, for, as he explains, "the politician . . . differs greatly [from the contemplative] in respect of his activities" (8.1178a25-27). One of the two optimal lives is the political life. Aristotle simply does not envision a life of private moral virtue. The only good private life is the philosophical life.

Likewise, discussing practical wisdom (*phronesis*) in the *Nicomachean Ethics*, VI, Aristotle ascribes this virtue to those like Pericles who manage households and are statesmen, for they understand what is good for themselves and for humankind (VI.5.1140b7-11). It

seems that it is political leaders who exercise practical wisdom and, thus, moral virtue. In short, in the *Ethics* a life of virtue is public rather than private.

There is, then, some philosophical basis for arguing for the importance of virtuous governance. I now want to consider this in the new circumstances of the digital era and consecrated life.

8.2 Digital governance - does it touch on religious life?

It would be difficult not to agree that digital technologies have brought about massive change in human culture. If culture could be described at the very least as modes of self-expression by individuals and groups (whole societies), then the digital has brought a whole new way of being, new lifestyles. Because of digital technologies (think just of the changes they have wrought to communications) human beings now live in a different way with regard to space and time, reality and truth, memory, knowing, selecting the criteria for what is good and what is bad. Social and political life is different, as also our appreciation of art and science. Pedagogical approaches have been affected, even one's sense of identity (one's sense of how that is expressed through digital ID mechanisms for instance) has altered. It would be foolish to imagine that members of consecrated life are not influenced by such radical change, as it would also be foolish to imagine that approaches to governance in religious communities have no need to change in the light of this.

Might digital governance touch on religious life?

8.2.1 Formation

Still resisting the temptation to go straight to the concrete and practical, I want to first suggest that those responsible at various levels of governance in a religious institute (not just individuals, but groups like Chapters, Councils) need to exercise a governance which takes account of the digital in formation of new members. Religious Institutes draw up a *ratio fundamentalis institutionis et studiorum*, for example. Does this *Ratio* take adequate account of the kind of digital world and culture we now need to work within, dialogue with and evangelise? Can we interpret what is already there (presuming this has been given long and careful development drawing on the institute's tradition and experience)? I would like to take this up by using an example from the Salesian Congregation. We cannot expect at this stage to find much reference to 'digital' as a term; more likely we will see constant reference to 'Social Communication', this being the term used in much Church documentation.

Does the Ratio take adequate account of the digital world, the culture we live in and need to dialogue with, evangelise?

The Year 2000 edition of the *Formation of Salesians of Don Bosco*, more simply called 'The Ratio', has sixteen specific references to 'social communication' and a host of other references to communication in general. The former set are sprinkled throughout each section. I believe we should be interested in most of these references, especially if we are reading them from a particular point of view - for example the concepts which lie behind free (as in speech), and Open Source.

The first reference we could be interested in is four references into the text, at Chapter Three where the real work of the *Ratio* begins - 'Aspects of formation and the values and

attitudes to be assumed'. The reference comes under subheading 3.1.5 titled 'Responsible freedom'. This is significant. There is an initial discussion of 'freedom from' and 'freedom for', and the social communication reference is to serious critical formation that enables one to pass respectful and objective judgements on persons and events and take a stand on cultural models and norms. From this point of view it is important to be able to look at the means of social communication critically and use them responsibly.

I would also suggest that other documents which have come about as a result of the *Ratio* be investigated to see if they too need some updating from this perspective. In the Salesian case, the already cited *Salesian Social Communication System* would need some minor adjustment.

A second reference is a little further on, when the *Ratio* opens a new subheading titled 'Openness to reality'. I find it significant that the *Ratio* has somewhat neatly allied these two notions of responsible freedom and openness to reality, significant, that is, in a discussion on free and Open Source. Anyway, this second reference is interesting in its own right. It defines what Salesian 'openness to reality' is about:

attentiveness to the solicitations coming from his surroundings and to a possible direct encounter with the realities of youth, poverty and work; willingness to live attuned to the world's great problems;

sensitivity to culture and society, contact with other workers in the field of education and human development, attentiveness to social communication; ... and then an additional reference to

an interest in making the best use of information - be it Salesian, ecclesial or cultural.

I maintain that Open Source is closely connected to the way we view culture and society, as also to the question of access to and use of information.

The next, and for present purposes, final set of references to social communication in the *Ratio* comes in the sections dealing with one or other level of formation: prenovitiate, postnovitiate, specific formation and so on. Here the references are to the sciences which need to be learned and applied, amongst which the science of communications. Again there are a number of references to 'being open to' or 'sensitive to', but one reference in particular interests me, one we might otherwise gloss over without much thought. It is well towards the end, in reference in fact to specific formation, where the theology student, in this instance is encouraged in #468 to tackle a:

Theoretical framework for the theology of communication.

Here he is encouraged to 'familiarity with the instruments' and a contextual knowledge of the styles, codes and languages of the modern means of communication.

I maintain that this reference, even if its original authors didn't quite have in mind what I have in mind, is what the Italian language calls 'indovinato' or intelligent and intuitive.

But it could also be put in very simple and direct terms: the web, word processing are today being added to or are even replacing in some situations, reading and writing as we have known them. They have become basic cultural survival tools. Not only should we all be capable of using them, but we have a duty to become better users than many, by way of witness. If we don't, we run the risk of handing over control in some areas to others, to do (at a cost usually) what we cannot.

8.2.2 Free and Open Source and the Ratio

Let's just recall what FOSS is and begin to show the links with the *Ratio*.

At the heart of the FOSS issue is source code. Source code! I am not about to get all technical and mystical with cyphers and symbols that only a machine understands. Let me define source code as the human expression of an intellectual work in a form that functions as a template for packaging and distributing a product. What most might be thinking of as 'source code' is not that at all, but 'object code', or the result of the human readable directions of a writer (in this case a programmer) after his instructions have been compiled for one or other type of machine.

To put it in a way that I am sure makes sense for most people - ancient manuscripts are source code, were source code, for literary publications, be they laboriously copied by monks in a monastery or rapidly churned out by a fast printing press after Gutenberg.

The central issue with source code is the way it is viewed. Software's source code, much more humanly readable than you think it is, is regarded as a secret by one approach (proprietary), and as part of the human cultural heritage by the other (Open Source). If I may switch to speaking of soft drinks instead of software, it's the Coca Cola versus homemade ginger beer that is the difference. And for various historical reasons it was the Coca Cola model that the marketplace adopted in the pre-internet era which gave the direction for proprietary software, rather than homemade ginger beer. It did not have to be that way - the marketplace could have adopted the other approach. In fact it didn't.

The proprietary model makes its money, really, out of licenses, not the actual software. And here, although in reality Open Source Software is often free as in no cost, it does not have to be - commercial and Open Source are not opposites. The opposition lies in the model of production. Open Source by definition never charges licence fees. Never. If it does it is not Open Source. It may, and it is welcome to, charge for work on the software itself.

8.3 A question of ideology

Authors in the Open Source world still own and can place restrictions on the way their creation is used, but they can't deny access to its source code nor can they prevent people from developing it. That simple fact is hugely important and leads us back to the kind of values and attitudes the young Religious in formation is encouraged to develop. And at this point I have to say that FOSS is less about technology as such or technical things, than it is about ideology. This, just like any discussion on formation in the *Ratio*, is an ideological issue. And for this reason it is also a governance issue.

A FOSS project will be freely licensed, will abide by open standards (such as accessibility), and will have a community around it, usually a very active community. Ideologically it is a choice for a more socially balanced evolution for the ICT and information society, therefore, when I read in the *Ratio*, in #404 that 'the sciences of man and the sciences of education [which include social communication] ...make it possible to have a better understanding of man and the evolution of society', you begin to see how the Open Source approach to this very evolution is not something we can ignore.

The proprietary model (not to be confused with commercial software, or hardware or commercial anything), which regards source code as a business secret, was developed before the explosion of the Internet. It has continued but it is losing ground, because it does not fit the Information Age, and indeed needs to create a radicalisation of Intellectual Property even at times to create an artificial scarcity of knowledge and information. Salesians, especially if forming others to attitudes to do with the world of communications, cannot accept that view, and need to examine their Congregational practices to see if some of them are unwittingly shoring up a some anti-human perspective.

Had I begun from the point of view of which software one could or should be using, you would be right to debate with me a whole host of reasons why it doesn't make sense to use one or other kind of software, and you could be right. But if we can establish the important issues behind this question and even settle on some principles, then we can have a calmer debate about which software we use and why.

8.4 Digital Inclusion

Since inclusiveness is a key tenet of the Open Source approach, it would be worth spending a moment with the idea of digital inclusion. The 'digital' simply sets the context, it doesn't add any particular layers of mystification to the idea of 'inclusion'. Inclusiveness is at least a candidate for being a moral virtue in a democratic society. Some philosophers would argue it is also an epistemic virtue because it is crucial, today, to answering the question 'how do I know?'. To be excluded in today's society, means lack of access to knowledge and information amongst other things, in a world where this kind of access helps define us for who we are.

I could define digital inclusion as being the use of technology either directly or indirectly to improve the lives and life chances of people in the place where they live. I am thinking here of the poorer echelons of society for whom we work - digital inclusion would need to be a Salesian attitude (in any re-writing of the *Ratio* I would argue for use of this term) towards a young person on the street or in any marginalised situation. The point being that we often speak of our mission to the marginalised; now the digital era offers us one way to speak of inclusion.

There have been a number of studies made of this area, but since this is not an academic essay and my purposes are not strictly academic, I am not citing these at length. One project however, did interest me. It is called the *Teens and Technology RoundTable*, which has held a series of round table discussions. One in 2001 was called 'Towards Digital Inclusion for underserved youth'. The discussion, which was a kind of research

approach in its own right, looked at ways that ICT adds value to lives, and in this case young lives. It found that technology can reconnect youth to learning and give them curiosity and a sense of empowerment. Interesting the kind of language being used in this finding - participants spoke of re-engaging youth by meeting them where they are. Salesians would call that the preventive system, with a few additional features of course.

Do I need to add that this RoundTable was a discussion premised on Open Source, not the proprietary model? It made the point, after listening to concrete examples, that this approach implies a change of pedagogy - we cannot simply restructure the school model to fit the new circumstances. It argued for programs which make young people producers rather than consumers. As I read this material I could not help but think that it is really about educommunication. Open Source and educommunication can go and probably must go hand in hand.

8.5 Some emerging discussion issues

One part of governance is identifying the issues; another part is looking to ways to respond to them. It seems to me that a number of issues are beginning to emerge for us to consider. Religious usually have considerable human resources and motivated ones at that. If an Open Source approach (meaning, always, an ideological approach based on certain principles) is consonant with who we are (in the Salesian example as educators and evangelisers), then we have one question at least to ask - have we actually contributed some thinking to the world in this area?

Could we identify some of the issues and questions? Do we have our own examples of best practice? What steps can be taken to assess and evaluate these in our own contexts?

We have so much experience determined by our mission - we must be able to spell out the needs of people to whom that mission is directed in the context of a global, digital ecosystem. Can we do that? The Salesian Congregation has already elaborated a Salesian Social Communications System. Nobody has ever said it is a finished document or rather that it cannot develop further. Does SSCS adequately suggest the ideological stance we might take in this area?

Have we contributed to the world's thinking, best practice in this area?

8.6 Policy

One of the central issues is policy. We may have no Congregational policy, say in the area of Open Source, and maybe have thought, or maybe have not even done that much, that there can be no call for such a policy. I differ on that personally. I believe we should be taking some steps towards policy, but would be very careful about how we do it. So what can we do about policy and what are some possible policy steps to both create awareness and bring about change with regard to use of Open Source in our Congregation?

8.6.1 FOSS policy

Having said that, a policy on Open Source (which might also touch on how our publishing efforts view authors' rights and licensing, intellectual property rights in other words), just might suggest practical steps to do with software because that's where people often begin to enter into the deeper issues, by taking the practical steps first. Herewith a broad outline of areas that might be considered in such a policy:

8.6.1.1 Outline of intervention areas for a possible FOSS policy

A series of intervention areas may be as follows:

- software procurement¹
- awareness-raising and information
- education and evangelisation
- Mission and development Offices
- administration

Perhaps there are others - I only selected ones which immediately came to mind. As an example, think of Mission and Development Offices. I recently walked into one in Europe and took the opportunity to look at the processes they were using - entirely Microsoft based (no surprise). But imagine the cost of that operation and how the same funds could be directed towards their objectives (which include financing the mission) rather than taken up in administration. Imagine the witness value if they were to promote free software in their areas of involvement.

8.6.1.2 Goals and targets

This is beginning to sound like a business plan, but recall that business must also be part of social communications objectives! Each of the policy areas we choose needs to have its own goals/targets. For example, that we aim to create 100% awareness of FOSS and its implications amongst province leadership worldwide. That is an achievable target.

¹One might ask: what is the real issue with software procurement? I believe it might help if I put it this way: information comes before software. Despite what I said about the social significance of software earlier, it is also true that software is a tool. Information comes first. Hence the issue is to ensure that information is accessible, and the way to do that is to aim for OpenDocument. ODF (open document format) is an industry standard, indeed now recognised as an ISO standard, enabling easy exchange of information across platforms and based on the XML developed by *OpenOffice*. The ISO reference for ODF is ISO 26300. ODF is not limited to *OpenOffice*, and the issue is not this or that program but any program which abides by open formats. A software procurement policy, however, could say something like 'the easiest way to create and preserve knowledge in OpenDocument Format is with *OpenOffice*'.

8.6.1.3 Choices based on criteria

The kinds of criteria to be applied are as follows:

- reliability
- performance
- scalability (will it suffice for very small jobs as well as for very big ones)
- security
- Total Cost of Ownership: really, this is often overlooked - it includes acquisition, purchase (not the same thing - it costs me to drive somewhere but may cost much less to download from the Internet), licensing, administration, training and support, upgrade. The TCO of software can be considerable!

8.6.1.4 Strategy formulation

If it is an achievable target, it will be achieved by adopting one or more concrete strategies. We need to help people do this. Even giving each provincial leadership team a simple summary of this discussion would be a strategy which might help achieve the stated objective. Consider one strategy approach by the South African Government:

Government will implement OSS where analysis shows it to be the appropriate option. The primary criteria for selecting software solutions will be improved efficiency.

This might not suit a particular religious community as a strategy, but it is at least a good example of how to formulate one.

8.6.2 Re-reading key Congregational slogans

All religious institutions have their slogans, very often dictums handed down from the founder. Salesians, for example, have Don Bosco's 'Good Christians and honest citizens' as one of several such slogans. I do not want to take up both aspects of that slogan in a theological framework, but simply to return to the idea of Open Source and citizenship, again linking this concept with matters that Salesians have given much thought to.

In 1974 25% of the world's leaders were democratically elected yet, by 1996 66% of them were - a huge increase over a relatively short period, but interestingly enough, indications are that European and American youth show a decline in democratic participation over that same period. Poor youth are one question, but it might be that it is a question of major sections of youth, some of them not so poor.

Open Source invites digital inclusion. Digital inclusion is closely connected to citizenship in democratic societies. One is a citizen in the truest sense when one feels included as a member of a community, when his or her rights are respected and voice is valued. The effect of this is to help citizens feel responsible for the common good.

The web/internet and Open Source are inextricably linked. While desktop software adopted the proprietary model early on, pre-internet, the Internet developed out of a FOSS model and continues to work that way. There isn't a person on earth, using the Internet, who is not also using FOSS, but they don't realise it. Most of the world's Internet servers are FOSS servers.

One of the realisations we need to help people to have is this closeness of web and Open Source, web and open access to information and knowledge.

So, while we all know that Don Bosco's slogan of 'honest citizen and good Christian' came out of an entirely different context, the question remains - do we need to reinterpret this, and maybe other all-embracing slogans of our tradition?

In the light of our digital context, are there some slogans of our tradition that could be re-interpreted?

8.7 The cultural shift from scarcity to abundance

Earlier in this series of essays I wrote of 'abundance', tying it immediately to the 'bigger, better, more features' approach we are accustomed today. What was lacking from the reflection at that point was a longer look, and in the light of what I have also said about discourse and its impact, we need to take another look at this matter of abundance. How is it to be managed by a religious institute today?

If we pick up the history of communications from the time of Gutenberg, we see how it is dominated by images of scarcity. While the printing presses were able to churn out the books, time and space were amongst communication's greatest enemies - time taken to transport materials across vast distances, the high cost of production and distribution. We can add to that political approaches which fostered scarcity of information as a means of control, and it would not be too harsh, I think, to say that the Church and its many institutions were part of that thinking. As a result, the public fought for public space! There is no need to review the history of the Enlightenment - suffice it to say that the term is a metaphor of the need to throw light on dark, hidden spaces.

The contrast must be immediately obvious, in the digital age. The Gutenberg galaxy has been left behind and we are now in a new galaxy of largely free, open spaces. The images are less those of scarcity and more those of abundance - all, at least in theory, may enter without privilege or prejudice. I am not arguing that the digital galaxy is better than the Gutenberg one but just making the comment that it is so different. To an absurd extent, at times: privacy which used have a certain 'sacred space' about it, has been desacralised. Indeed, the more private something is the more public it may become! Are there governance issues there for religious communities too?

The digital era has changed the way people manage information - but it has not necessarily changed the way religious congregations manage information. Given the much-touted 'information overload' of our time, it should be no surprise that members of communities pay less attention to internal communiques, or given the high-intensity of contemporary communications (email, cellphone) we can understand why members might be less inclined to spend longer time in deeper reflection. These things are yet another offshoot of 'abundance'.

I have been trying to probe some of the deeper governance issues, suggesting that

What society are we meant to be signs for, if not this society now?

reflection on the 'digital' needs to be part of governance today. At some point communities of consecrated life need to ask what is the relationship between this form of life and digital culture which is so invasive of that life. What society are we meant to be a sign for, if not this society now? Have we shifted from thinking of digital things as a collection of 'new technologies' to recognising that together they make up in fact a culture?

Have we shifted from thinking of digital things as a collection of new technologies to recognising that together they make up a new culture?

8.8 Practical matters

There is no shortage of practical matters touching on governance in the digital era. Consider the following list offered in a recent email:

Applications online - (no envelopes, letters to be checked) initiation, dispensation, missions work, project proposals.

Superior as guardian of printed morality - (no printed hard copy to censor) influx of spam, viruses, unsolicited porn, scams.

Temperance in media use - (no TV to check what people watch and how long) Internet now incorporated into various kinds of equipment (convergence): pda, laptop, workstation, smartphone, even the fridge.

Identity security - (integrity of identity verification in superior-client correspondence), but also security in general; are you really talking to the Superior General? Does the email you got this morning really come from this or that member?

Are you really talking to the Superior General? How do you know?

Confrontation between superior and confrere via email, digital post-its, flaming, etc.

Number 4 raises another issue - the ease with which one can now communicate with the major superior, bypassing all other channels, and sometimes in ignorance of (or possibly even in defiance of) canonically established channels.

To the above list we can add others:

Canon 578: 'The whole patrimony of an institution must be faithfully preserved by all...'. We have touched on this under the general heading of digital preservation.

Security of email, other digital material - recognising that no matter what anyone says, email is never completely secure, nor are P2P networks. It seems to me that security of digital materials is generally a haphazard thing in communities; some individuals practice it according to what technical understanding they have. What steps are we taking personally or as a community to ensure digital security (this can mean a whole range of things, starting with a distrust of any secure email system, but also using techniques in software or systems to make things more secure: password care (do we know what kinds of password are more secure than others?), encryption, hidden drives and materials...it would be possible to outline a broad policy on digital security.

Do I know what kind of password is more secure than another?

Digital preservation. At many points throughout this collection of essays I have touched on preparation of, conservation of documentation in digital forms and by digital means. Here too a religious institute could benefit from some overall strategy. I would see this as part of any statement on the 'system' of communication. We need to add into our understanding of this system something about the digital information cycle: the design, creation and maintenance of digital information. It would be helpful for a person to respond to a simple set of questions before preparing a document: is this document for only personal use or will it be used by others? Will it be written by me but updated by someone else? Will some items of information in it be used in other documents? Which media is this information best prepared for? Can I give thought to the logical structure of this document, which may well be different from the physical structure? We need to study and understand, in other words, the production, distribution, storage, access, ownership, selection, use of information in a technologically determined environment.

Will the document be written by me but updated by another? Will that alter my way of preparing it?

Descriptive markup. Without realising it, people who create documents are already employing markup - usually presentation markup (called 'layout') or grammatical markup, which is none other than the fact that we have space boundaries between words, commas to mark phrases, full stops to mark sentences and so on. But today, the digital preparation of documents really requires an additional markup and it is so often missing. We call it descriptive markup - logical structure (indicated perhaps by tags), metadata.

Working collaboratively. The rhetoric of communion, collaboration is constant in religious communities. We do not always realise the extent to which working in digital ways can facilitate this. The digital world looks on a digital document now less as 'my creation', an object, but more as a space where people go to work together. It is possibly the difference between thinking of the mechanic working on an engine and thinking instead of the garage where a number of mechanics may help one another with different parts of the engine. What sorts of actions facilitate collaboration? Email, for example is actually the lowest common denominator for file exchange. Shared folders would be better. The digital collaboration landscape is populated with things like blogs, wikis, instant messaging (IM), RSS, even Google search. And having mentioned email, let's recognise that it requires a different etiquette than letter-writing: it assumes rapid response, it means we need to organise it so we do not overlook an email and can find one rapidly, and so on.

8.9 Digital Asset Management

Throughout these essays I have spoken often of 'document', but just as often have implied the kind of document that stretches the term a little - a video, even an audio file. There could be a combination of many types of media in one 'document'.

It is one thing, however, to talk of 'document management' when it refers only or mainly to text, and yet another to talk of a wider concept - digital asset management,

which includes the broader sense of 'document' just described. It is time to bring together some of the references through these essays into a single system of digital asset management, with the suggestion that a community or institute needs to think of a systematic strategy in this area.

Tools and processes in digital asset management:

1. (repository - a representation of the content of digital materials, most likely through some form of relational database (effectively what the Greenstone option, spoken of earlier, offers).
2. Metadata -this has been described adequately already.
3. Search engine - to work on the basis of the first two items.
4. Access and rights - not everyone needs or should have access to everything.
5. Workflow - who enters, maintains materials for example?

File and content types in digital asset management: other than primarily text-based materials intended for output to paper (.doc, .pdf, .xml...) we have visually rich materials with images, line art, designed documents, audio, video, Flash, HTML, presentation material...

8.10 A document to conclude with

In June of 2005, the Superior General of the Salesians of Don Bosco wrote a letter to Salesians the world over which he entitled 'With the Courage of Don Bosco on the Frontiers of Social Communication'.² What Fr Chávez did in that letter was really the beginnings of my own reflection on these matters - he had modelled a reflective process. He had done his reading and thinking and had sought a number of applications of his thinking for a world-wide group of consecrated persons. I also think that this is the right moment to return to that letter, at the conclusion of my own reflections, for he had already begun to offer some of the directions I have indicated as desirable if not essential for religious life in a digital age.

We can omit the references to the history of this kind of thinking in the Salesian Congregation, and take up the letter instead from its second part, 'Challenges thrown up by social communication'.

Fr Chávez begins by looking at the rapid developments in technology, noting that when a new technology becomes part of everyday social life, it provides a new language for the interpretation of life'. He then provides examples: the book 'gave origin and impulse to individuality, ...to a logical and linear approach, ...emphasising rationality.

²*Acts of the General Council* 390, June 24 2005, Editrice SDB, edizione extra commerciale, Direzione Generale Opere Don Bosco, Via della Pisana 1111, 00163 Roma-Bravetta, but also available online at www.sdb.org

Television 'prefers to use repetition rather than analysis, myths rather than facts'. Internet 'has become the means for a new way of living and thinking. Nonlinear, bidirectional, unconfined, interactive, mutant and floating, the network is a place, a language, a way of using and thinking communication, which arouses considerable interest and also concern'.

He sees 'virtual reality [as] nothing else but the newest method in a long chain of interfaces'.

Of particular interest is Fr Chávez' analysis of the innovations in media at technical and structural levels. He lists them thus:

1. From 'one to many' to 'many to many': digitalised media is of the many-to-many, one-to-one, all-to-all kind.
2. From centralisation to decentralisation: with the coming of digitalisation decentralisation is now the *status vivendi* of the form of communication.
3. From local to international communication: digitalisation through the network has merely amplified the tendency to globalisation.
4. From mass-media to personal media: and here he notes that digitalisation also allows control by hidden powers such as secret services, or by big central commercial enterprises to keep tabs on the profile of their customers.
5. From mass programming to personal programming: about this aspect a great debate has been in progress for some time about the encrypting of languages, the defence of copyright, proprietary culture, the privacy of the user.
6. From proprietary software to Open Source: he describes this latter as 'a vision of shared knowledge that would be of benefit to all', and as 'a way of moving towards the democratisation of information and culture'.

At this point, moving from a broad analysis of trends and changes, Fr Chávez lists some characteristics of the new digital culture:

1. We are living in a high speed culture: he notes one negative result of this - that categories like the aged, the disabled, the poor, or those who do not fit into the prevailing social model, become...marginalised.
2. The interface creates new attitudes and mentalities: it has accentuated the need for the person to act - an attitude then carried over into the social sphere.
3. The new culture presents a polyphonic vision of reality. It is more difficult today to attain to certainty or truth because we are immersed in a sea of all the truths claiming to be absolute.
4. The attitude of nomadism: passing from one point to another on the network is sometimes reflected in one's lifestyle as passing from one experience to another. In its positive form this is a culture of detachment, research, offering, but can also lead to abuse and dishonesty.

5. The network can be an instrument of education and formation.
6. This environment is driving us ever more into an almost absolute dependence on technology.
7. The Internet is generating within itself what is known as the digital divide. All this makes us reflect once again on the importance of not separating the problem of digital culture from the economy, politics and justice.
8. The electronic media have an influence on the way control is exerted on social life; this brings into question the
9. Concept of authority in a media dominated society.

This more detailed analysis (and the reader will have begun to see the direct links with my own reflections, some of the terms even - detachment for instance), is then followed by some applications as he notes that the cultural environment just described impacts on education (action, processes, encounter, sharing, interchange, the senses). It also impacts on the institution: how do we communicate, through digital information, who we are, our charism? How does an institution face up to and compete with the market forces in this field which are much larger and more powerful than we are. Here Fr Chávez offers the metaphor of David and Goliath, the fact that we need structures that are light and strongly motivated but extremely flexible - and the fact that we should get in there and do something!

The letter contains other matters, but I have selected what I believe is most pertinent to my own reflections. Overall, the letter was a masterly effort of the kind that 'digital governance' should be about. There is reflection, analysis and there are pointers for drawing up policy.

How do we communicate who we are, our charism, through digital information?

Digital to-do list

- Review the Congregation's or institution's Ratio for reference to these issues.
- Take the lists of practical matters for consideration (and the lists offered by Fr Chávez) and apply them to the local situation. What can we do differently as a result?
- Draw up a FOSS policy.
- As an institution or community, consider a digital asset management policy which takes into account the kinds of issues raised in these essays.
- Adopt an organised and appropriate strategy for email - one which ensures a fast but careful response, and recognises that email is never fully secure.

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