This report is intended as a visionary tool to guide priority decisions in e-government over the coming years. Several methods are planned to make this project a reality, including public-private partnerships, the use of opportunities presented by free software and, above all, overall project management, which must be based on careful prioritization of the proposed initiatives (see Figure 17, page 158). A vision is based on a reflection process which cannot be carried out fully in a context where there are barriers related to the harsh reality of budgets. However, it is essential to remember that all actions required to make e-government a reality by the end of the first mandate are spread over a three-year period and that over the coming years other priorities will surely compete with the e-government project for available funding. Projects must therefore be prioritized to favour those with the best profitability criteria in terms of added value, improved services to citizens and reduced costs.

However, the departments and agencies already spend a great deal of money on the delivery of e-services, whether to develop or maintain direct services to the population, or for management systems that incorporate information and communication technologies. Overall, the *Conseil du trésor* estimates indicate that the budget for all informational resources, including the delivery of e-services, is in the order of $851 million for the 2002-2003 fiscal year. This figure includes the continuation of projects and the development and administration of new projects. Expenditures for the 2003-2004 fiscal year are estimated at over $1 billion. Based on this information and an analysis of what is already taking place in e-government, it is realistic to support the vision stated in this report. In the short term, the development and deployment of e-government will require major investments spread out over several years. However, with a more judicious use of the amounts spent by the D/As on the delivery of e-services, we can do more and we can do better. It is a question of political willingness, effective governing, increased coordination and systematic sharing of expertise and infrastructure.

Amounts specifically allocated to the development and deployment of e-government could, for example, be obtained by requesting a contribution from the D/As directly from the budgets currently allocated to the delivery of e-service. As such, the experience of the *Secrétariat à la communication gouvernementale* is a model example.
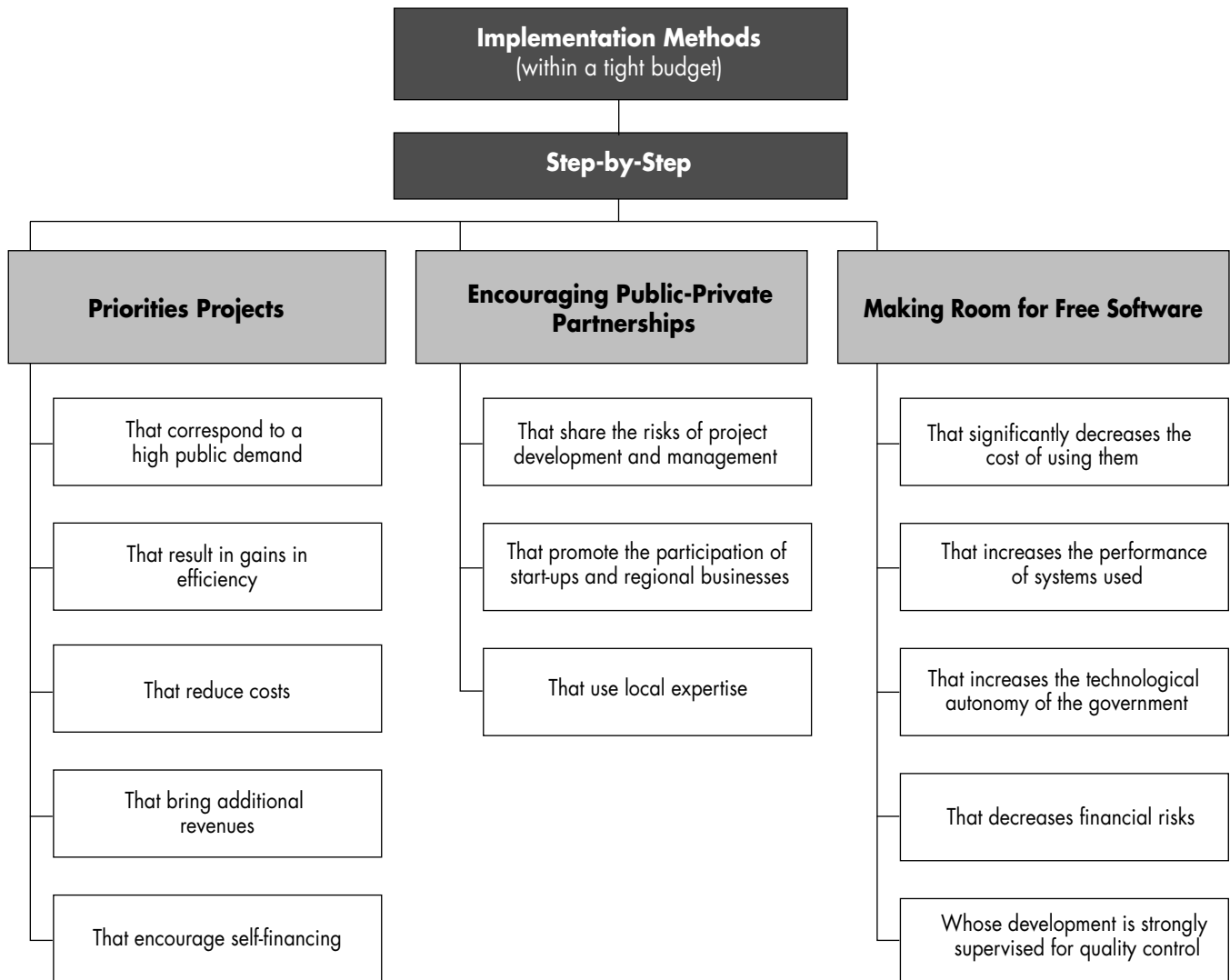
• *Step-by-Step*

To minimize the risks associated with implementing large-scale projects, the government must implement e-government projects gradually. In addition to providing tangible results for citizens and businesses in the near future, this approach—which breaks down project implementation into several steps—has the advantage of allowing for adjustments to be made as they are identified. Therefore, timelines must be short.

Functions must therefore be placed on-line even if project completion is not expected for several years. This is particularly true for the "My Gov. Info." citizen's page. Since not all information in the departments, agencies and network institutions is available in digital format, only new information can initially be included in the citizen's page project. The retroactive digitization of information will involve considerable amounts of money and will therefore have to be carried out over several years. Nevertheless, by placing the citizen's page on-line starting next year, the government will create the reflex in users to consult the page, which is essential to the project's success.

IMPLEMENTATION METHODS (cont'd)

Figure 17: Implementation Methods

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                        ┌─────────────────────────────┐
                        │   Implementation Methods    │
                        │     (within a tight budget)  │
                        └─────────────────────────────┘
                        ┌─────────────────────────────┐
                        │         Step-by-Step         │
                        └─────────────────────────────┘
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Priorities Projects	Encouraging Public-Private Partnerships	Making Room for Free Software
That correspond to a high public demand	That share the risks of project development and management	That significantly decreases the cost of using them
That result in gains in efficiency	That promote the participation of start-ups and regional businesses	That increases the performance of systems used
That reduce costs	That use local expertise	That increases the technological autonomy of the government
That bring additional revenues		That decreases financial risks
That encourage self-financing		Whose development is strongly supervised for quality control

RECOMMENDATIONS

6.1 We recommend that the government set funding rules for the overall e-government project to promote more effective use of capital with the objective of cooperation and sharing. Specifically, we recommend establishing mechanisms that will favour contributions from the D/As to the overall budget allocated to the delivery of e-services.

6.2 We recommend that the government opt for short-term project implementation schedules, and that it put functionalities of e-services that are part of the overall project on-line as they are developed.

1. Projects for Citizens and Businesses

The government has an obligation to invest public funds responsibly. Recall that e-government is a project designed to meet the needs of citizens and businesses. As the current budget is limited, it is essential to set priorities in order to invest in the right places. Meeting the needs of citizens should be the foundation of all choices related to e-government. In the section on e-government in its 2003 report, the Auditor General of Canada stated the following:

> "Recent research indicates a growing understanding that the services offered by governments on-line need to be those that deliver the greatest value to citizens and businesses. Governments face the considerable challenge of improving take-up rates to justify the large investment in the services."[74]

E-services must therefore meet the strong demand expressed by the public. It would be difficult to justify the major expenses required to implement e-services if the latter did not meet the expectations of the target clientele. Consequently, a serious cost/benefit analysis of e-service delivery projects must be done systematically, taking into account public preferences and needs. Placing these services on-line must result in significant gains in efficiency and reduced costs for the government. This will lead to optimized management of public funds and better delivery of services to citizens.

This is why, in the first phase of implementation, i.e., by the end of 2007, projects that result in what citizens and businesses consider concrete applications should be systematically favoured. The implementation of e-government could serve as a pretext for major investments in the computer infrastructures of departments and agencies, some of which, admittedly, are quite old. However, it is imperative that technology be considered a means to an end, and not the opposite. Although these investments would certainly not be in vain, they would not meet the primary objective of the project, which is to improve services for citizens.

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[74] Office of the Auditor General of Canada, 2003 Report, Chapter 1, p. 2.

IMPLEMENTATION METHODS (cont'd)

Certain projects can lead to direct and immediate savings (such as on-line tax returns, for example). Others can generate income for the government by charging modest user fees for real value-added e-services. In fact, we feel that citizens and particularly businesses would be prepared to pay small fees to use e-services provided the latter generate true gains in efficiency. Finally, certain projects can be self-financing, for example, through sources of direct, recurring income, as could be the case with institutional advertising on a government Web site. The amounts collected could be reinvested in new projects, with the initial successes becoming the catalyst for what follows.

RECOMMENDATION

6.3   We recommend that the government give priority to projects that meet the demand of citizens and businesses, that provide concrete improvement in services to citizens and businesses and that generate significant gains in efficiency and reductions in costs for the government.

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2. Public-Private Partnerships (PPPs)

The current government's philosophy consists, among others, in promoting government interventions in its major sectors of activity, while allowing the private sector to intervene within limits in other sectors. The government must allow experts to develop initiatives within their spheres of competence, while trying not to interfere in areas in which it is not qualified. In this context and given the great expertise and leadership skills of Québec businesses, the e-government project is counting on the active participation of the private sector. Moreover, on April 27, 2004, the president of the *Conseil du trésor* announced that a central agency had been commissioned by the government to oversee the implementation of PPP projects.[75]

The *Bureau des partenariats d'affaires* of the *Secrétariat du Conseil du Trésor* defines public-private partnerships as follows: "A PPP is a contractual agreement between public and private partners that stipulates the results to be achieved in order to improve the delivery of public services. This agreement establishes a real allocation of responsibilities, investments, risks and benefits so as to provide mutual benefits that promote that achievement of results."[76]

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[75] http://www.tresor.gouv.qc.ca/ministre/discours-ch-commer-mtl_o4.htm, [on-line], site consulted May 3, 2004.
[76] http://www.tresor.gouv.qc.ca/marche/partenariats/papp.htm#1

The Canadian Council for Public-Private Partnership defines public-private partnerships as follows: "A cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards."[77] Accordingly, the partnership aims to grant private companies responsibilities previously carried out by government employees.

The *Conseil du Trésor* is already asking each department and agency to identify possibilities for public-private business partnerships in major investment projects and to submit a report on them. Consequently, all projects related to e-government should be covered by this evaluation and be supervised, where applicable, by the central agency.[78]

The private sector's contribution to government projects can take different forms. Several types of PPPs have been proposed by the parties considering this subject.[79] In addition to the usual forms of contracts,[80] the *Institut économique de Montréal* has identified three possible types of partnership agreements between the State and a partner business, as well as two forms of outsourcing. These are summarized in the table on the following page.

The sharing of risks[81] inherent in partnership agreements enables the government to minimize the financial risks related to implementing a project and the private sector to increase its potential profits depending on the success of the mandate. PPPs also give the public partner access to greater expertise, which would be difficult to develop internally. According to the *Institut économique de Montréal*, "studies conducted by the OECD indicate savings for the client varying between 10% and 30%," minus the costs related to requests for proposal processes and project supervision. In addition to other benefits, the *Institut* states that projects developed under a PPP agreement generally adapt better to the changing needs of citizens, since "when the private partner's revenues and profits depend on the public's use of the infrastructure or service, there is an incentive [for the private partner] to provide attractive services that are adapted to emerging needs."[82]

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[77] http://www.pppcouncil.ca

[78] Digest of management policies, *Concernant les orientations du Conseil du Trésor sur l'évaluation de l'option du partenariat d'affaires public privé pour réaliser des projets majeurs d'investissement*, C.T. 1999534 of February 25, 2003, Vol. 10, Chapter 1, Topic 2, page 12.

[79] A document published jointly by the Bertelsmann Foundation, Clifford Chance Pünder and Initiative D21 mentions partnership agreements, forms of cooperative or financing agreement, integrated citizens' involvement and informal cooperation (Public Private Partnership and E-Government, a publication within the series PPP in Practice, August 2003, Bertelsman Foundation, Gütersloh, p. II).

[80] The usual types of contracts are project implementation (traditional package agreements between the government and providers for implementing a project whose major parameters are established by the client) and the proposal of a solution (providers are required to develop a service offer according to a situation stipulated by the client. The solution that best addresses the problem and meets the budget will be selected).

[81] It is important to remember that the risks incurred by private businesses are not measured only in terms of cash, but also in return on investments, or lack thereof. For example, in a project worth $10 M, Microsoft might contribute up to $1 M (i.e., 10%), but actually assumes 50% of the risk due to the impact related to its liabilities: If the step for which it is responsible fails, then the entire project collapses.

[82] *Institut économique de Montréal, Les notes économiques*, Des services publics plus efficaces grâce au partenariat public-privé, September 2003, p. 3.

IMPLEMENTATION METHODS (cont'd)

Table 2: Types of Public-Private Partnerships

Outsourcing		Public-Private Partnership		
Subcontracting	Delegated Management	**Lease A** The private partner builds an asset and leases it to the State, which operates it (build, own, lease).	**Lease B** The private partner operates an existing asset belonging to the State and pays the State rent.	**Concession** The private partner builds an asset (or acquires an existing asset from the State in order to renovate), operates it, then transfers it to the State at maturity (build, own, operate, transfer).

Source: *Institut économique de Montréal*, September 2003

Regardless of the form adopted, "a true partnership requires that the two parties combine their efforts […] to cooperate in order to achieve a common objective, most often associated with the delivery of a public service."[83] In their collective efforts, the two parties must involve internal clients, i.e., the employees of each organization, in developing the solution so that it will be adopted it more easily by both parties. Transferring the information quickly and providing the necessary training facilitates the integration and acceptance of the changes associated with partnership projects, thereby helping to counter the usual reflex to resist change. Communication between all the stakeholders involved and the support and firm commitment from senior management for this type of solution are determining factors in the success of the project.

In its project management, the government must also strike a balance between wanting to control a project and giving companies sufficient flexibility in order for them to show initiative. Splitting major projects into several requests for proposals is an appropriate way to reflect this desire for balance.[84]

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[83] CEFRIO, *Partenariat public-privé: Du choc à la conciliation des cultures*, 2002, p. 11.

[84] In this regard, note that, currently, projects under $100,000 do not have to be approved by the *Conseil du Trésor*. While this provision significantly lightens administrative procedures, it can also lead to the splitting of contracts by project managers. We may need to evaluate the consequences of this administrative option in greater detail.

2.1 Promoting Participation by Start-Up and Regional Businesses

The government must know how to encourage small and start-up businesses, as well as reduce the financial risks. Start-up businesses resent the fact that requests for proposals often include clauses related to experience as one of the eligibility criteria for submitting bids. The categorization of contracts according to their scope appears to be the best solution for achieving this balance. When the government grants smaller contracts to small and mid-sized businesses (SMB) and very small businesses (VSB), the risk for the two parties involved, i.e., the government and the businesses, is distributed. Subcontracting can also be a good way of involving smaller businesses in large projects. Accordingly, these businesses, which have often developed specific expertise, can work in conjunction with general consulting firms.

To promote regional employment, the government should systematically study the possibility of stipulating in its requests for proposals that service providers be required to use regional resources (up to a given percentage). Subcontracting to local companies reduces the risk, as the contracts are managed by national companies that have the necessary experience to carry out large-scale projects. Moreover, this method of allocating personnel contributes to regional economic vitality, which is in keeping with the mandate of any responsible government. Decentralization of project management would boost participation by local businesses.

The *Secrétariat pour le développement du gouvernement en ligne* could decide to conduct a technology watch to identify solutions developed by Québec companies that meet international development standards.

2.2 Using Local Expertise

PPPs are also an opportunity to market the know-how developed by the private sector in export markets. These marketing possibilities stimulate private companies to develop innovative solutions for the government. Moreover, given the existence of international norms and standards, projects destined for mass marketing must be designed from the outset with this in mind. The government must therefore be understanding of the issues related to this type of marketing. The various consultations held with ICT businesses indicate that they are prepared to finance certain solutions in full provided they can then export the expertise developed to other jurisdictions. This bold solution could enable the government to implement projects for which it does not have the immediate necessary financial resources.

These new development possibilities require a study on the intellectual property rights to the solutions developed. Who owns the rights? How will the public partner and the private partner share the profits generated by marketing the solutions? To ensure that all parties involved benefit, it is important that win-win agreements be made from the start.

Insert: A Few Examples of Successful PPPs Involving ICTs

The following examples could serve as successful models for Québec in establishing new types of partnerships under e-government:

- Alberta Government Services (a public organization that offers a range of services to citizens and businesses) mandated the private sector to run its One Window component (one-stop point for information and services via telephone, mail, counters and the Internet), i.e., the management, launch, operation and maintenance of systems. According to sources consulted, the private partner is paid on a per-transaction basis.

- In British Columbia, access to fee-paying government services (particularly databases) is managed by a private partner responsible for developing and operating applications, as well as commercial development, for an investment of $55 M.

- In New Brunswick, an investment agreement between Service New Brunswick (SNB) and a private partner enabled the latter to market SNB intellectual property to governments in the United States and Europe.

- In the United States, specifically Indiana, citizens and businesspeople have access to a wide range of government data on the Internet, 5% of which are available for a fee. The profits from the transactions are shared between the private and public partners.

- In Québec, the government's new electronic requests for a proposal system will be operational in June 2004. In this case, the private partner is responsible for developing the system and providing the service, and will be paid according to pre-established rates.

- The *Registre des droits personnels et réels mobiliers* (RDPRM) is another example of a successful partnership. In this case, the private partner invested $2 M to design the register and is responsible for promoting its use, being paid according to the number of registrations and consultations.

- Finally, the NETMETAL portal (stemming from a CEFRIO research project), whose R&D, prototype and commercial launch phases resulted in a promising solution for SMBs, is the result of several years of collaboration. This project is the result of a partnership between metal companies (which must subscribe to access the services on the portal), an e-business solutions company (responsible for development) and the *Ministère du Développement économique et régional* (responsible for promotion). The portal, which enables fully computerized electronic auctions, among others, meets a need within the industry and is slowly becoming profitable.

Source: *Bureau des partenariats d'affaires, Secrétariat du Conseil du Trésor*, September 2003

RECOMMENDATIONS

6.4   We recommend that the evaluation of possible public-private partnerships be a prerequisite to investing in any major project. This process must also consider the possibility of including small and medium-sized Québec businesses in major projects. We also recommend including local ICT businesses in regional government projects.

6.5   We recommend that it be clear in the definition of request for proposal criteria that businesses be granted the necessary latitude to develop initiatives requiring substantial flexibility.

6.6   We recommend that projects developed in Québec meet international ICT standards so that the expertise developed can be exported by the private partners and lead to the sharing of profits.

3. Making Room for Free Software

Since the first free software project (project GNU), the number of these projects has increased at a phenomenal rate. Accordingly, numerous free software applications are now available, specifically on the Internet, to the point that some have even become indispensable tools. Close to 60% of Web servers, for example, work with Apache, a free software application, and 80% of e-mail traffic on the Net is managed by Sendmail, Postfix and Qmail, three other free software applications for servers."[85]

Moreover, industry giants such as Oracle, HP, Intel, IBM and Apple are spending billions of dollars on developing free software. Apple even uses free software, named Darwin, to run its operating system.

The main characteristic of free software is that it allow for free or conditional access to the application's source code, in other words, its skeleton. According to the Free Software Foundation, "the term 'free software' [also] refers to users' freedom to run, copy, distribute, study, modify and improve the software."[86]

For UNESCO, free software is an ideal means of ensuring cultural diversity, specifically multilingualism and the development and conservation of information:

> "UNESCO has always encouraged the extension and the diffusion of knowledge and recognizes that in the field of software, free software spreads this knowledge in a way that proprietary software does not allow. UNESCO also recognizes that the development of free software encourages solidarity, cooperation and community teamwork between developers and users of new technologies." (UNESCO, 2002)

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[85] Chartier, Philippe, *Vive le logiciel libre!*, Science Québec, May 2002.

[86] Free Software Foundation, http://www.gnu.org/philosophy/free-sw.fr.html [on-line], site consulted May 12, 2004.

IMPLEMENTATION METHODS (cont'd)

Free software in its current state also contributes to narrowing the world digital divide by providing free access to new technologies.

The use of free software is an issue that affects all public administrations around the world, and several have already begun a study on the matter, including the United States (particularly the Department of Defense, the Department of Energy, the White House and the National Security Agency), Chile, Brazil and Italy. Peru is even on the verge of legislating on the issue, having already tabled its draft bill *Free Software in Public Administration* (source: *Conseil du trésor*). At the municipal level, the city of Munich has converted its 13,000 workstations to free software, and Vienna plans to do the same with 15,000 workstations in 2004.

There are many benefits to choosing free software. First, its use can bring economic benefits by reducing costs. In fact, the use and development of free software is a promising avenue for the future in terms of reducing costs compared with proprietary software. Nevertheless, users and organizations should conduct cost/benefit analyses before making a choice, since many costs must be considered–installation, management (migration and user training), maintenance and upgrades, system security costs, etc.

Experiences in other countries have shown that savings related to using free software should not be expected in the medium term. For example, the police force in the German state of Lower Saxony invested $82.5 million to convert its 12,000 workstations to Linux and free software with anticipated savings of $20 million over five years.

In Québec, the MILLE consortium (*Modèle d'infrastructure de logiciel libre en éducation*), comprising three Québec school boards, the GRICS, the RESCOL, the *Ministère de l'Éducation du Québec*, Cégep Montmorency and the CRIM, is evaluating whether free software can be a viable and economically beneficial choice in the education sector. With school board and school budgets shrinking year after year and software costs skyrocketing, the use of free software seems to be a promising solution.

A research group at *Université Laval* is also studying the issue, specifically, the legal implications of switching to free software, the identification of available products and supports, the associated risks, and the general advantages and drawbacks of this option. The group is also trying to determine the total cost of software ownership and the potential savings, where applicable, resulting from the generalized use of free software.

Also, free software must include functions that are as powerful and secure as those of proprietary software. In fact, system security is a major issue for e-services. This is clearly seen by the numerous software upgrades required to correct the bugs that are eventually detected. In this regard, free software presents an advantage for security experts since they themselves are able to check the source code for errors and major security loopholes and make corrections on the spot.

"Free software has a much better reputation: It is possible, if we have access to the source code, to evaluate the quality of the code, as well as the security offered by the software. There are numerous forums, discussion groups and community sites on the integrity of free software. If there are any security problems, they are detected earlier and are generally resolved more quickly since the community of programmers involved is very large."[87]

Moreover, the cooperative development of free software provides the benefit of a rich development process that can quickly meet the demand. In fact, both users and experts can contribute to development at an early stage and suggest new functions. With free software, there is no question of making a suggestion to the manufacturer in the hope of including it in the next upgrade. Users are not held hostage to the scheduled issues or upgrades of proprietary software.

Free software therefore offers greater technological independence than proprietary software in terms of both development and cost. In fact, the use of free software lessens the risks related to a software owner's financial situation. Free software does not depend on the stock market situation or the financial interests of shareholders or the decisions of corporate leaders, but rather in large part on the community of programmers who contribute to its development.

Consequently, the reflection on the place of free software within government could lead to a systematic assessment of this issue, particularly during the acquisition stage. This reflection should take into account the benefits and drawbacks of each system, the total cost of ownership, the durability of data and the respect for government standards. This systematic assessment will enable the government to create an environment conducive to a policy on free software provided the assessment criteria show it to be desirable.

RECOMMENDATION

6.7   We recommend that studies be conducted on adopting a government policy on free software.

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[87] http://www.mille.ca/mille/logiciels/pourquoiLeLibre.do