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Expert Meeting on Free and Open Source Software:
Policy and Development Implications
Geneva, 22–24 September 2004

**REPORT OF THE EXPERT MEETING ON FREE AND OPEN-SOURCE
SOFTWARE: POLICY AND DEVELOPMENT IMPLICATIONS**

Held at the Palais des Nations, Geneva,
from 22 to 24 September 2004

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Chapter I

CHAIRPERSON'S SUMMARY

1. This summary focuses on the nature of the dialogue during the meeting and its salient points. The arguments and opinions presented are those of a broad selection of experts and do not necessarily represent a point of consensus. Indeed, a wide range of views was represented, and these helped fuel a healthy and active debate. All experts, whether from developed or developing countries, shared a high level of enthusiasm for learning and discussion about FOSS. While the underlying perspective of developing countries has been referenced within the framework of the UN Millennium Development Goals (MDG) and included “bridging the digital divide”, the Expert Meeting clearly showed that FOSS was truly a global issue. A basic discussion and definitions of FOSS are provided in the UNCTAD background document “Free and Open-Source Software: Policy and Development Implications” (TD/B/COM.3/EM.21/2) and Chapter 4, “Free and Open-Source Software” of UNCTAD’s *E-Commerce and Development Report 2003* (UNCTAD/SDTE/ECB2003/1). The presentations and information about the keynote speakers and panelists can be found on the Internet at www.unctad.org/ecommerce/.

FOSS principles and developments

2. The meeting opened with discussions about the fundamental nature and principles of FOSS. It was suggested that FOSS had to a certain degree changed the economics of the information technology (IT) industry, encouraging greater competition in the sector and helping to develop a software industry that produced or serviced code and programmes. Aside from this direct economic and financial implication, FOSS provided empowerment, an environment for the development of local industry and skills, sovereignty and security. It was suggested that the free and open nature of the code was particularly beneficial for use in scholarly institutions and higher education, as it allowed future programmers to learn from existing code and was useful for ethical education, teaching students the spirit of sharing with other members of their community. This could become part of a policy prerogative for bridging the digital divide. The ethical dimension was important for exercising development policy with a social conscience. Several experts felt that this was a particularly important feature for developing countries because it moved them away from the threat of technological dependency. Public use and governance were inseparable issues. Experts discussed the need to view the source code as well as the need to change it. FOSS provided both possibilities while not placing limitations on who, and under what conditions, could learn from the code or modify the software.

3. The relevance of public use was complemented by efforts to advance greater acceptance in commercial use and business environments. Here, open dialogue was essential. Speakers suggested that the open and collaborative development process that produced FOSS was generally efficient and resulted in good programmes. Quality and reliability issues had generally been resolved and worldwide use was growing inevitably. In addition, FOSS provided a level of transparency that governments needed and often requested from their technology suppliers. Clients were also becoming more demanding, requiring the delivery of the source code as part of a procured software application. While some governments had indeed decided on pro-FOSS legislation or policy, it was suggested that government policy should provide for equal consideration of all software types. Whatever the decision, internationally agreed file formats were a positive and welcome development for the commercial use of IT, and FOSS supported this notion. Experts also asserted that the discussions should not focus only on FOSS under the GNU General Public Licence (GPL) and maintained that

other FOSS licences, such as the licences for BSD or Apache software, allowed both free and proprietary use, should the developers identify the need and opportunity. Other experts pointed out that the GNU GPL ensured the sustainability of the freedom to change and redistribute the source code.

4. The discussion noted that the FOSS process influenced technology development in general, and particularly as users overcame anxiety about the security and predictability of the development path of certain applications. The issue of encryption was raised, and it was suggested that free and open code allowed users to satisfy their need for security in exchanges involving corporate or government communication. However, the discussion noted that governments might sometimes feel uneasy about being required to redistribute their encryption algorithms or other security-sensitive source code. In reply, it was explained that security and encryption FOSS code could be modified and kept private, by an individual developer or an institution, by not redistributing it publicly.

5. The discussion continued by addressing the issue of software patents. Several delegates contested their usefulness and maintained that software patents were an unwelcome development. Others asserted the interlinked nature of patents and technology development. Experts informed the meeting of various academic and empirical studies advancing these divergent views. In a related discussion of intellectual property, questions were raised about the difference between FOSS and software in the public domain. It was explained that, because of the copyright provisions in various national and international conventions, there were very few programmes in the public domain, unless the programmers actually declared them as such. FOSS licences were devised to use copyright to allow public-domain-style use while maintaining the same software unrestricted – something that public domain cannot do. However, some experts said it was a mistake to regard a discussion about copyright as related to the issue of software patents, since the two were entirely different in nature. Several delegates discussed the issue of laxness of giving software patents even though actual policy in the European Union did not recommend patenting.

6. A further issue raised was the problem of quality assurances. Was FOSS – the process and the product – too unpredictable for entities with strong commercial or public mandates? How frequent were the changes? Did this require updates? Who actually edited the code? Several experts advanced that, from the perspective of these questions, developing FOSS was not very different from developing any other software. Users were welcome to choose one out of many versions of the same or a similar project. It was suggested that the massive peer review and debugging that free and open code allowed could produce more stable and effective applications. However, FOSS experts themselves asserted that their own programmes were not completely bug-free.

7. A popular topic was the one of how software related to technology trade restrictions, and a number of delegates expressed their concerns about contravening national law by engaging in the distribution or redistribution of FOSS. Several experts, while expressing their concern, reassured listeners that this was not an issue, as the number of mirrors and the multiplicity of distributions allowed all users to appreciate, benefit from and contribute to FOSS.

8. The discussion also addressed the role of the UN system, including its own use of FOSS and how it should support international NGOs and other pro-FOSS organizations such as FOSSFA and IOSN. The discussion concluded with comments that FOSS was neither anti-business nor anti-commercial and that, in private use, users were free to modify code without redistributing it. In this sense the economics of FOSS was pro-market and pro-competitive. However, some experts cautioned against judging an issue of users' freedom solely in economic terms.

The economics of FOSS

9. The experts discussed different economic aspects of FOSS and their importance for developing countries. In particular, they examined the added value brought by FOSS, the emergence of an economic sub-sector related to FOSS, and the issue of intellectual property.

The added value of FOSS

10. The initial discussion pointed out that, although the collaborative effort behind the development of FOSS represented an enormous economic value, FOSS itself could be used, copied and edited free of charge by businesses and the public. This resulted from the fact that programmers were willing to contribute continuously to the development of FOSS because it afforded them the opportunity to learn and develop knowledge and skills and share them with peers. It was argued that the importance of FOSS lay in this added value – which promoted grassroots creativity, innovation, leadership and teamwork – rather than in reduced input costs. Members of the FOSS community became active participants in the creation and betterment of transparent software and moved away from being passive users. In this sense, FOSS enabled institutional collaboration among government, public organizations and civil society, thus reducing duplication in the procurement and development of similar applications. Also with regard to the issue of input costs, it was noted that, while FOSS was often used on refurbished computers, such refurbishments were rarely cost effective.

11. The experts offered examples of added value provided by FOSS in Malaysia, South Africa, Spain and Brazil. For example, the adoption of GNU/Linux software by a local government had been accompanied by a widespread digital literacy program and had promoted FOSS adoption by the private sector. At the entry level, the learning and use of FOSS did not require very sophisticated skills or vast economic resources. FOSS enabled affordable, rapid and universal deployment of IT and promoted the local IT economy. Also, FOSS was part of a virtuous circle in which knowledge begat more knowledge. In this regard, the international community had a role to play in promoting software adoption and innovation, in particular if it was to serve as a tool for economic development.

Software as an economic sub-sector and FOSS

12. Value was also added by the new ways of economic participation that were enabled by free and open-source code development and open standards. These helped shape a new economic sub-sector of the IT industry, namely services and support related to FOSS. Therefore, participation in FOSS development had positive implications for income generation and employment opportunities. It could also lead to local innovation and leadership, as well as export of knowledge. However, it was suggested that many developing countries would find developing and exporting retail-packaged software an unrealistic proposition; this assertion was contested by others.

13. It was noted that free and open processes often responded to community needs, rather than being dependent on the necessarily and understandably narrower business strategies of vendors and proprietary developers, and that they often resulted in the careful peer review of developers' skills. Endorsed certifications were becoming widely accessible and affordable and themselves benefited from the inputs of the people being tested. In this regard, government and intergovernmental bodies had a role to play in promoting open standards and FOSS so as to ensure that the best interest of the public was served by the deployment of high-quality professionals and the increased flexibility of choice. Of course, developing countries needed to first create awareness of the economic alternatives and opportunities opened up by FOSS.

FOSS and intellectual property

14. The experts discussed the adequacy of the current intellectual property (IP) regime with respect to software development. Some argued that the current system of copyrights and patents encumbered the true openness of standards and the development of FOSS, particularly in the case of developing countries. Some experts argued that the standards themselves must be free of patents and copyrights in order to be truly open, encouraging innovation and reducing undesired dependence on vendors. The system was at odds with the rapid pace of software development and the non-proprietary nature of free and open code. Several experts argued that, as an alternative, open standards contributed to the protection of IP by allowing the creator of data to control the tools to access his or her own work while maintaining interoperability and open access to data. In this context, it was noted that that FOSS could promote the technological independence and sovereignty of developing countries and promoted diversity in the global software ecology.

15. Others argued that the IP system was an objective tool that could be used to protect and reward creative software development, whether it was based on FOSS or proprietary models. Certain experts felt that the term “intellectual property” was too general to be used in this context, as software copyright and software patent issues were genuinely different. It was noted that free software licenses used the current copyright system in order to subvert conventional limitations on the creation, distribution and use of software. However, many proponents of FOSS found it difficult to accept software idea patents in principle and urged governments to reject enabling legislation. It was stated that all countries needed to engage equally in copyright and patent policy making at the international level in order to enjoy the benefits and leverage the tools of the system. It was suggested that the effects of the IP system on innovation and creativity be studied further.

Government usage and policy

16. The treatment of this topic started with a discussion of issues that developing countries could take into account in the formulation of their national FOSS policies. The central position of software in the emerging information societies and the role that FOSS could play in facilitating the sharing and diffusion of knowledge was underscored. Several experts said that the debate about the relative merits of FOSS vis-à-vis proprietary software and the relevance of legislative measures to foster the adoption of FOSS or even to make its use mandatory in the public sector was not about technology but about a society’s political, cultural, economic and social values and choices. On the other hand, the view was also heard that practical considerations as to which were the most expedient ways to apply IT to solving urgent development problems should be paramount in choosing the software models to be employed in specific environments.

17. Governments that have opted for explicit policies promoting the adoption of FOSS have done so on the basis of arguments related to greater control over their IT systems, including in sensitive areas such as security and data confidentiality. Another reason has been greater stability and quality controls and independence from suppliers. The enhancement of local IT skills and the development of the national ICT industry were often mentioned as potential benefits of using FOSS. It was noted that the meeting was not examining the potential development benefits of non-FOSS software in conjunction with FOSS software or the comparative impact of displacing current and potential future economic activity based on non-FOSS software. Finally, interoperability was of particular importance, as it enabled citizens using software of various types to interact electronically with government services.

18. The contribution of FOSS to digital inclusion programmes undertaken by national and local governments in developing countries was also discussed. It was said that, because of its lower costs, FOSS gave such programmes a much wider reach. It also represented an easily sustainable model for the diffusion of information and communication technologies (ICT) in developing countries. In this connection, one advantage enjoyed by developing countries was that they had a smaller legacy of computers and that FOSS adoption would thus be facilitated in the sense that computerization would be achieved from scratch, without the problems of migrating from another software environment.

19. The discussion then moved on to underscore that the development of FOSS raised some complex issues concerning the application of ICT to development problems and that simplistic responses and “optimism traps” should be avoided. It was important to ensure that FOSS policies were adapted to the specific environment of each developing country and to its ICT policy framework, so that development goals were effectively linked with FOSS-related strategies. Several approaches were said to be visible among developing countries: some of them actively supported FOSS, others had adopted policies aimed at levelling the playing field among the various models of software procurement and production, while yet another group had adopted a “hands-off” policy. Two other categories were distinguishable, which were not defined by their attitude towards FOSS but by (a) an explicit decision to buy local software, whether FOSS or proprietary, or (b) the requirement of the use of open standards.

20. It was pointed out that government support for FOSS carried the risk of altering the essentially decentralized character of the FOSS movement and bringing this under government control. To counter this danger, it was stressed that governments should not attempt to control the FOSS community (which, given its international character, would be impossible at any rate) but should limit themselves to exercising their purchasing power in order to influence the evolution of software development models.

21. FOSS policies should “start small” by, inter alia, addressing pressing issues such as connectivity, ensuring that IT public procurement was merit-based, stressing the development of generic IT skills in education, and supporting open standards. FOSS provided new leverage power for the governments of developing countries in their relationship with international investors and IT players. At the same time, as they developed and implemented FOSS policies, governments should engage in a dialogue with the local IT industry.

22. Experts presented some experiences of development of local FOSS distributions. The discussion noted that such projects were an achievable task but not a simple one. They required a strategic perspective and planning, including getting all stakeholders involved in the project, providing free training and promoting a FOSS culture among professionals, users and policy makers. It was pointed out that in the marketplace there were examples in Africa of developers using FOSS to create and sell closed-source solutions. Other experiences discussed concerned UN agencies. Although FOSS had raised a considerable amount of interest within the UN system and numerous examples of FOSS usage could be mentioned, a coherent, all-embracing strategy had yet to be formulated for the UN system as a whole.

23. The relationship between public policy in the area of digital rights management technologies (DRM) and FOSS development was also touched on. It was explained that DRM required that end users not be allowed to examine the workings of their programmes, computers and devices. In so doing they would use knowledge and technology that were in contravention with laws supporting DRM. The same laws generally also made it illegal to tell anyone else how to circumvent DRM. The

result of this was the criminalization of certain mathematical and logical processes and of FOSS itself. It was said that, if the advantage of FOSS was that it could keep end users from being tethered to their vendors and act as a hedge against anticompetitive behaviour, then, by backing DRM with national law, societies were limiting fair use and supporting monopolistic behaviour, often realized by a purposeful lack of interoperability coupled with network effects.

24. Diverging views were heard about the issue of the degree of competition prevailing in the global market for software products and whether government policies mandating the adoption of FOSS software in the public sector were compatible with multilateral trade disciplines or with long-term development objectives. Some experts were of the opinion that mandatory use or other forms of preference for FOSS in the public sector could be harmful for the development of local IT industries and for the overall competitiveness of developing economies. According to this view, the market for software products is highly competitive and government policies should ensure technological neutrality vis-à-vis FOSS and proprietary software. Other experts pointed out that such policies merely aimed at promoting competition and levelling the playing field for the various modes of software development and promoted competition. For these experts, it was important to ensure that public policy removed obstacles (for example, some aspects of patent law) that could thwart the development of FOSS and its ability to compete with proprietary software products. Others said it was a mistake to apply the principle of technological neutrality to the choice between FOSS and proprietary software, since this was a choice of social arrangements rather than a technical choice.

Commercial usage and applications

25. Participants acknowledged, from different perspectives, that FOSS was not only a technical concept but also one with political, economic and socio-cultural implications. While some attached specific importance to the value of freedom (freedom of education, freedom of choice) that FOSS provided, others stressed that its use also made economic sense.

26. It was suggested that FOSS software solutions be considered for both business and government IT needs. Today, FOSS was being increasingly used and developed in many developed and developing countries, as well as among the leading global IT or IT-powered businesses. In its commercial uses, FOSS was successful because it provided an affordable business model by allowing a greater number of vendors to support it, thereby increasing competition. FOSS was flexible, and users did not need to wait for updates from vendors but could introduce changes to programmes themselves or hire a programmer to do it for them. This stimulated the commoditization of technology and allowed companies and users to focus on their core competencies. However, it was clear that in many organizations the impact of FOSS had not yet been fully realized.

27. FOSS had several unique advantages as well as some additional risks that needed to be weighed when considering using FOSS software in a business situation. Some aspects to consider were licensing, support documentation and legal liability. Attention was drawn to the existence of a wide spectrum of licences, from licences that posed no restriction of any kind, to those imposing minor restrictions (such as the need to give credit to the original author(s)) to those that imposed reciprocal obligations and/or contained patent clauses. It was suggested that any government or corporate enterprise that used FOSS software should have a clear documented policy that included legal review, business case development and community involvement.

28. Similarly, some experts argued for the need to avoid stereotypes and to recognize that combining the proprietary and non-proprietary approaches could yield good results. Businesses already used a

wide range of FOSS and proprietary software, and many combined both in varied formats. It was suggested that, while a fully FOSS system might be preferable for relatively simple business processes, a full proprietary system could be more appropriate for complex systems, while infrastructure could be best served through a combination of various types of software. The majority of experts, on the other hand, emphasized that in the most advanced and complex areas of ICT, such as grid computing, the supremacy of FOSS was evident and growing. Similarly, in the production of industrial and consumer electronic appliances, FOSS was used with increasing frequency as embedded software owing to the extreme ease of adapting the source code to any device.

29. Challenging the preconception that FOSS is not suitable for use in commercial environments, experts described and contrasted several successful examples of businesses' using and deploying FOSS. For example, some companies provide FOSS operating system distributions while others centre their business around support and services for FOSS software. Still others produce and sell made-to-order FOSS for profit, and consultancy businesses sell their knowledge about which software should be used in a specific context. There are also other innovative, albeit less tested, models, such as dual licensing schemes where the same or similar software is provided under a free and proprietary licence.

30. A major lesson learned from the application of FOSS software to projects in the commercial and private sector is that a business-led, rather than a technology-driven, approach is vital for project success. If the strategic needs of clients and the needs of user communities are satisfied, FOSS can provide access to the building blocks of innovation, allowing clients and users to collaborate and operate in a diverse, multi-vendor business environment. Thus, a widely accepted notion was to balance the risks and rewards offered by different software models, and to look beyond initial licence fees.

31. Additionally, experts recognized that FOSS brought new ways of developing and providing software. The handling of existing software and the methodology of software development could be done in a more evolutionary and distributed way, namely by modularizing tasks and using very broad peer reviews. This was a lesson that could be applied to proprietary software as well.

32. A more controversial topic of discussion was FOSS's impact on innovation as compared with that of proprietary software. No objective conclusions could be drawn as to which model was best for innovation. First, there were different types of innovation, from inventions to innovative processes; second, different studies and accomplishments showed how both software development models had provided innovation opportunities. Nevertheless, all experts strongly agreed on the importance of fostering innovation for economic and social development and that open processes had a role to play. In this sense, the discussion complemented the debate in the sub-session on the economics of FOSS.

FOSS and creative industries, education, science and health

33. The experts considered the relevance of FOSS to accelerating the growth of a knowledge-based society. FOSS was recognized as an important tool for serving and contributing to the achievements of the MDGs and bridging the digital divide.

34. The contribution of FOSS and its impact in specific sectors such as education, science, health, and creative industries was discussed, especially as they related to developing countries, and not only on the demand side but also on the supply side. The close philosophical relationships between FOSS and those sectors, especially science, where sharing information was vital, was underlined, and FOSS was said to respond better to the call for a free and open information society. It was suggested that

governments consider legislation that would encourage or promote the distribution of software, produced by publicly funded scientific research, under FOSS licenses such as the GNU GPL. The development of freely licensed and high-quality educational, reference and encyclopedic content in local languages would mirror the development of FOSS and would provide open content and open access.

35. Several experts provided a brief overview of how FOSS could help in those sectors and highlighted some of the benefits and challenges of FOSS, showing how its use could play an important role in supporting services and systems by providing widely accessible, affordable, equitable and flexible local solutions. They stressed the fact that many of those sectors, such as health and education, were not well served by available software, and that FOSS offered potential solutions in this regard. In addition, FOSS was said to favour the exchange of services and products developed in the FOSS community, thereby encouraging local skills and creativity and creating a sense of ownership. It was stressed that developing countries should, to the extent possible, join the information society as developers, not only consumers.

FOSS and development implications

36. The experts acknowledged that FOSS was proposing a new model that provided new opportunities and empowered communities to be less technologically dependent, while at the same time offering a wealth of business opportunities. Many developing countries were no longer asking themselves whether FOSS represented economic value or not, but were looking for concrete projects and policies to take full advantage of it. The role of governments in this regard was important because making correct choices required taking into account the necessary linkages between all sectors and the overarching ICT policy.

37. Support from international and regional organizations, as well as associations in developing countries, was strongly requested, both in awareness creation and capacity development but also financially in order to enable developing countries to understand and deal with the issues linked to FOSS and to make optimal use of their public resources when defining their ICT policies. Some experts recommended the creation of a fund that would allow a range of activities and products such as seminars, training courses and hardware, allowing UN organizations to assist developing countries in adopting policies that would enable them to make a fair and informed choice. The cost implications of choosing between proprietary software and FOSS were underscored.

38. The experts recalled that digital inclusion in developing countries had not been achieved yet, and that thus they were not able to take full advantage of the benefits of ICT for development. It was stressed that a major factor hindering the use of ICT in these countries was the lack of software products taking into account local languages and other specificities of a country. Here experts emphasized the comparative advantages of FOSS products, which were often easily localizable. FOSS could be adapted in terms not only of language but also specifics such as calendar, measurement units, and so on. However, experts stressed that localization required continuous efforts and constant adaptation. Several experts also said it was necessary to develop some standard that would facilitate localization. Continuous adaptation required a skilled workforce, and this had implications for governments when they defined their human resource development policies. FOSS was also recognized as a great stimulator of the Web content industry.

39. Several experts asserted that individuals and organizations should be given a choice between proprietary software and FOSS. One of the main issues that governments had to contend with in

making decisions regarding the use of ICT was cost. The costs of providing access to infrastructure, computing and networking hardware and the necessary software were generally discouraging, in particular for developing countries. FOSS was said to play an important role in lowering the barriers to access to ICT by reducing the cost of software. Similar issues were encountered in the development and distribution of generic medicines, and some conclusions could be gained from that experience in particular countries. While government was involved with increasing frequency, it needed FOSS as much as, or even more than, FOSS needed it. Finally, regarding procurement issues, several experts noted that merit-based evaluation required considering the issue of free code as a merit in itself. Whatever the mode of implementation, some experts noted, freedom of choice was fundamental. Others affirmed that having the choice to resign one's freedom by not using FOSS was neither a good choice nor a freedom in itself.

40. Several experts emphasized that FOSS had generated competition for the proprietary software industry, driving the latter to elaborate solutions that would enable localization of their products and services to take into account the differences existing in distinct markets. The need for localization was also associated with the quality control notion in order to avoid incompatibility and inconsistency in terms of interoperability. Several experts mentioned the need to create a standard for localization that could be then adapted to best fit a given country. FOSS was said to respond quickly to the need for localization, compared to proprietary solutions that relied heavily on local input.

41. The need for international and regional cooperation was also noted. Public and private partnerships were encouraged in this area so as to facilitate emerging solutions, share resources, facilitate research, and more generally exchange information. It was recommended that consultations be held between FOSS and proprietary software developers. Several experts noted that the discussion need not be a polarized one, and that FOSS and proprietary software could and often did co-exist in the same IT environment. Every situation needed to be viewed from a practical perspective and the most appropriate solution applied in each circumstance. Governments needed to discern the true nature of ICT for development challenges and prudently evaluate the relevance of experience where conditions and environments differed. It was noted that underlying the entire discussion was the importance of ensuring that software innovation continued and was not stifled through poorly conceived policy.

42. Considering the role of the United Nations, the experts suggested that, as a general principle, UN publications be released using free and open licenses that would enable the world community to have free access to them and use and redistribute their content freely. Some delegates felt that international organizations needed to consider their positions on the use of FOSS and proprietary software in technical cooperation projects. While development externalities were made possible by using FOSS, issues of cost and limitations of available resources could promote more serious consideration of FOSS alternatives within the UN system. UN experts explained that FOSS was indeed used or under consideration for pilot use in several agencies, and that the results and lessons learned needed to be shared. To this extent, UN agencies' websites dealing with FOSS issues needed to mutually support activities, exchange links and share information. Further, it was more likely that FOSS, within the scope of the UN system and UNCTAD's contributions to the "ICT for development" agenda, would best thrive in an environment of partnerships embracing the public and private sectors, as well as civil society. A fundamental question was whether FOSS did and could help reduce poverty, what it could do for the everyday lives of all people, and how this related to the MDGs and the World Summit on the Information Society (WSIS) process. To elucidate this, it was felt that UNCTAD needed to continue its work on the subject of FOSS.

Concluding remarks

43. The Expert Meeting was conducted in an atmosphere of open and frank discussions and exchange of views that were relevant for developed and developing countries. The inputs of the speakers were of commendable quality, and the expert interventions from the floor were invaluable for better understanding the issues behind FOSS and what it meant from a development and policy perspective.

44. The general notion was that there were definite development benefits to be had from using FOSS and that, without prejudice to other software types and processes, policy makers needed to include FOSS, where viable and possible, as a matter of enriching their choice and realizing competitive offers.

45. The discussion was characterized by efforts to maintain a nuanced distinction between the concepts free software and open-source software. While most experts agreed that the two were usually the same, the issues of technological independence, the rights of users, and the need to deploy FOSS environments in educational and public institutions were discussed in more depth from the perspective of free software. In contrast, experts that saw FOSS's strengths as being in the quality of its development process and, ultimately, its products preferred to highlight the positive aspects of open-source code and how it could benefit commercial and business users.

46. It was apparent that very few, if any, governments had a doctrinaire approach to legislating for FOSS, and that those with a pro-FOSS policy agenda realized this through procurement, mainly by maintaining that FOSS options were included and considered in various tenders. While it was generally agreed that software should be chosen on its merits, it was questioned what these merits were and, from a public and ICT-for-development policy perspective, whether these were different given the possibility that particular positive externalities could be achieved using FOSS. Much of the discussion advanced the notions that FOSS promoted digital inclusion and provided a good foundation for an ICT software industry, as future programmers could learn from the best source code, by freely inspecting it, modifying it and including it in their own work.

47. Many of the issues raised were also relevant for international organizations and NGOs. A number of questions were raised about the possible benefits and merits of FOSS for in-house use or as a software development environment, as well as the use of free and open access processes and licenses for in-house content development and public distribution. Moving to issues of commerce and business, the experts were fully reassured that a number of prominent global ICT industry players had embraced some or all of the principles and processes of FOSS and that thus any doubts about its suitability for economic activities were unfounded.

48. While FOSS was an important issue for member States, the private sector, NGOs and civil society, the UN system needed to enhance its evaluation and consideration of FOSS; here the intervention and participation of the representatives of various secretariats, such as the UN Joint Inspection Unit, the World Health Organization, the UN ICT Task Force and the IT ICT Network of the UN High Level Committee on Management, were timely and useful. The UN system and UNCTAD need to further address the issues of FOSS from many perspectives. For UNCTAD, the trade and development issues were primary, and these needed to be related to the MDGs and to contribute to the WSIS process. More specifically, UNCTAD would pursue the implementation of an ICT-for-development partnership in order to promote human capacity development and awareness building with regard to FOSS. Finally, the discussion noted that a follow-up to this Expert Meeting should be considered, in particular with regard to UNCTAD's contribution to Phase II of the WSIS

process in Tunisia, and to providing substantive inputs for development policy and management issues discussed in high-level UN bodies such as ECOSOC and the Second and Fifth Committees of the UN General Assembly. In order to assist the debate and follow-up, UNCTAD's Commission on Business Facilitation and Enterprise will need to assess the work of this Expert Meeting using its full competencies and authority and provide clear guidelines and recommendations for member Governments, the UNCTAD secretariat and other international organizations.

Chapter II

ORGANIZATIONAL MATTERS

A. Convening of the Expert Meeting

49. The Expert Meeting on Free and Open-Source Software: Policy and Development Implications was held at the Palais des Nations, Geneva, from 22 to 24 September 2004.

B. Election of officers

(Agenda item 1)

50. At its opening meeting, the Expert Meeting elected the following officers to serve on its bureau:

Chairperson:	H. E. Ms. Sarala M Fernando (Sri Lanka)
Vice-Chairperson-cum-Rapporteur:	Ms. Béatrice Pluchon (France)

C. Adoption of the agenda

(Agenda item 2)

51. At the same meeting, the Expert Meeting adopted the provisional agenda circulated in document TD/B/COM.3/EM.21/1. The agenda for the meeting was thus as follows:

1. Election of officers
2. Adoption of the agenda
3. Free and open-source software: policy and development implications
4. Adoption of the report of the meeting

D. Documentation

52. For its consideration of the substantive agenda item, the Expert Meeting had before it a note by the UNCTAD secretariat titled “Free and Open-Source Software: Policy and Development Implications: Background paper by the UNCTAD secretariat” (TD/B/COM.3/EM.21/2).

E. Adoption of the report of the meeting

(Agenda item 4)

53. At its closing meeting, the Expert Meeting authorized the Rapporteur to prepare the final report of the meeting under the authority of the Chairperson.

Annex**ATTENDANCE ***

1. Experts from the following States members of UNCTAD attended the meeting:

Afghanistan	Malaysia
Benin	Malawi
Bhutan	Mongolia
Botswana	Nepal
Brazil	Oman
Cameroon	Pakistan
China	Philippines
Colombia	Republic of Moldova
Côte d'Ivoire	Rwanda
Cuba	Saudi Arabia
Czech Republic	Sierra Leone
Democratic People's Republic of Korea	Slovenia
Democratic Republic of the Congo	South Africa
Egypt	Sri Lanka
Ethiopia	Sudan
France	Switzerland
Ghana	Tunisia
Hungary	Uganda
India	United States of America
Iran (Islamic Republic of)	Venezuela
Italy	Viet Nam
Kenya	Zambia
Lao People's Democratic Republic	Zimbabwe
Madagascar	

2. The following observer country was represented at the meeting:

Palestine

3. The following intergovernmental organization was represented at the meeting:

Organisation Internationale de la Francophonie

* For the list of participants, see TD/B/COM.3/EM.21/INF.1.

4. The following United Nations agencies were represented at the meeting:

Economic Commission for Africa
Economic Commission for Europe
International Trade Centre
Joint Inspection Unit
Office of the High Commissioner for Refugees
United Nations Development Programme

5. The following specialized agencies and related organizations were represented at the meeting:

International Labour Organization, International Training Centre
United Nations Industrial Development Organization
World Health Organization
World Intellectual Property Organization

6. The following observer organizations/private companies attended the meeting:

Association des Compagnies d'Assurance au Liban
Bridges
Business Software Alliance
Canonical Ltd.
Computer Professionals for Social Responsibility
Comptia
Corporate Technologies (CPTech)
Creative Commons
Ecole Nationale Supérieure de Techniques Avancées
Electronic Frontier Foundation
Federation of American Women's Clubs Overseas
Free Software Foundation
Free Software Foundation for Europe
Free and Open Source Software Foundation for Africa
Hewlett Packard
IBM
Istituto Tecnico Statale Marie Curie
Linux Professional Institute
Microsoft
Nightlabs GmbH
Novell
Siemens
Sun Microsystems
Wikipedia

7. The following special invitees attended the meeting:

Mr. Ezendu Ariwa, Senior Lecturer, London Metropolitan University
Mr. Asomudin Atoev, Director, Civil Initiative on Policy of Internet (CIPI), Dushanbe,
Tajikistan

Ms. Aleksandra Belyaeva, Director, Civil Initiative on Policy of Internet (CIPI), Moscow,
Russia

Mr. Rishab Ghosh, International Editor and Co-Founder, First Monday

Mr. Mohammad Anas Tawileh, IT Expert, Linux Syria, Damascus