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First session
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Report of the multi-year expert meeting on enterprise development policies and capacity-building in science, technology and innovation (STI) on its first session

Held at the Palais des Nations, Geneva, from 20 to 22 January 2009

Contents

I. Summary of discussions

1. The first session of the multi-year expert meeting on enterprise development policies and capacity-building in science, technology and innovation (STI) was opened by the Acting Deputy Secretary-General of UNCTAD, Ms. Lakshmi Puri. Ms. Puri pointed out that, according to the Accra Accord, the multi-year expert meetings were innovative ways of addressing complex issues and developing policy recommendations. She stressed the importance of an "enabling State" in promoting entrepreneurship and innovation, especially in times of economic crisis. She emphasized that innovation and entrepreneurship would play an important role in enabling all countries to overcome some of the global challenges such as climate change and green technology, energy and food security, and economic and social development of developing countries.

2. One expert discussed some key elements in promoting entrepreneurship. He argued that entrepreneurship could be instilled in Government, public institutions and civil society. Therefore, an entrepreneurship policy should seek to create awareness and support, and provide incentives for creative minds, bringing together and integrating all the key players. He emphasized the importance of raising awareness to encourage the creative potential of the population. In Peru, and possibly in other countries, there are lawyers, engineers and other highly skilled labour working in low-income jobs such as taxi drivers, which proves a misalignment between education and real life. He stressed low-tech innovation tailored made to the needs of communities, such as the "Sierra Productiva" programme: (a) using reservoirs to gather the water and pinched plastic bottles in the irrigation systems; or (b) the bamboo initiative to produce paper in the northern part of Peru. He felt that inclusion of key players was particularly important in forming value chains for project development and equitable wealth creation.

3. Another expert used various examples to highlight the importance of providing the right incentives for innovation and commercialization of technologies. He showed why the Small Business Innovation Research (SBIR) programme of the United States was "sound in concept and effective in practice"[1] and a good example of promoting collaboration between research institutions and industry, because it filled the gap between standard venture capital financing – which is structurally limited and designed to get in late and get out early – and small research grants, enabling start-ups and expansion firms to cross the "valley of death". One of the success factors of the programme was that it opened up a competition for grants to small and medium-sized enterprises (SMEs), which included a thorough evaluation mechanism and linked those grants to existing economic needs and public procurement, eliminating the need for new money to finance that programme. The expert also highlighted that there were disincentives that policymakers needed to address: lengthy and complex regulatory procedures, heavy tax burdens, poor bankruptcy rules or penalties to cooperation among universities.

4. Experts noted an analogy between basketball and entrepreneurship and innovation public policies. For example, not all shots to the basket will succeed, but that is not a valid excuse to stop trying.

5. Experts also discussed about the roles of the market, competition and government, and came to the conclusion that – whereas in the past, there was a sort of consensus that government should only intervene to correct market failures and give positive externalities – the truth is that Governments have throughout history strongly supported many initiatives and many new technologies.

[1] Key finding of the National Academies Recently Concluded Assessment of SBIR.

6. Related to the current crisis, one expert quoted Rham Emanuel[2] saying "you never want a serious crisis go to waste" to refer to the need to learn from failures. This might be a good time to embrace the green revolution. There was also highlighted that in crisis times is safer to support innovation within an established enterprise rather than to support a new project from ground zero.

7. Government, academia and the private sector are expected to work together in a well-functioning innovation system. In that regard, academia needs to learn to commercialize its outputs.

8. UNCTAD officers underlined the core messages contained in the background documents prepared for the meeting. For one, they pointed to the different models around the world to promote entrepreneurship, such as the Earth University in Costa Rica and its Entrepreneurial Projects Programme. The strategically located "Innovation Hub" in South Africa and the Mubarak City for Scientific Research and Technology Applications (MuCSAT) in Egypt which houses about 40 per cent of the national industry and has 12 research centres. For the other, they signalled that only 1 per cent of the pharmaceutical sector outcomes of the last 30 years were addressed to developing country needs. In that sense, they argued that in order to have pro-poor STI policies, policymakers from poverty and STI fields had to work together, that it was necessary to promote technology enterprises and to facilitate the absorption capacity of STI of enterprises, and that the right regulation was needed to promote an enabling environment and facilitate generation and dissemination of knowledge.

9. Experts presented different entrepreneurship exemplary practice models for creating awareness and facilitating firm formation and growth. For example, Fundación Chile[4], a not-for-profit-foundation created in 1976 to develop ways of diversifying the Chilean economy, was one such unique financing mechanism. In brief, Fundación Chile created firms to validate new technologies and assess technical and economic viability to attract individuals to form firms in their sector of interest. Once private investment increased and the industry started to emerge, the firm that the foundation developed would be sold to the private sector.

10. Regarding firm formation, Burkina Faso was a notable example to follow. Its process of rationalization and simplification of formalities has eliminated formalities and attachments judged not pertinent, reducing the number of formalities from 25 in the 1990s to 8 in 2000, and the amount of time from 90 to 15 days. In 2005, the Government created along with the Chamber of Commerce the Centers for Enterprise Formalities (CEFORE). With the centres, nowadays there are only four formalities to fulfil, the delay is seven working days and the cost is as low as possible.

11. Experts noted that Governments, through public policies, should seek to improve the business environment conditions as well as boost entrepreneurial capacity through awareness-building and skills development. The successful programmes developed entrepreneurship curricula for students from elementary school to university, as well as for special target groups in the informal sector. Innovative approaches to building entrepreneurship education could be developed in collaboration with the private sector.

12. Some examples of successful programmes included Endeavor, a model for promoting high-impact entrepreneurship. Endeavor preferred to work in high-potential countries. Since its inception, Endeavor had screened 19,000 entrepreneurs, selected and supported more than 380 high-growth entrepreneurs who had created more than 86,000 high-value jobs and generated revenues of more

[2] Chief of staff for President Barack Obama.

than $2.5 billion. Endeavor Brasil started in 2000 and it will be self sustainable in the near future because successful entrepreneurs are signing up to a “give-back” programme, donating 2 per cent of their equity to Endeavor.

13. Another example is Enterprise Uganda, a one-stop enterprise development centre actively providing support to small and medium-sized enterprises (SMEs) to improve their productivity, growth and competitiveness. Companies trained and associated with the centre have easier access to credit and can expand. Enterprise Uganda was created and is run following the UNCTAD Empretec model. Its board is led by the most prominent indigenous entrepreneurs and composed of nine members: six from the private sector, one from the Ministry of Finance, one from the Central Bank and one from the United Nations Development Programme (UNDP). One of their successes was an enterprise trained by the centre, which spent $12,000; that the company used to contribute $45,000 in taxes, but after the training, it entered the list of the top 200 taxpayers in the country, contributing over $1,000,000 in taxes annually.

14. It was noted that Empretec entrepreneurship training developed personal entrepreneurial competencies in three clusters – achievement, planning and power. Empretec operated in 27 countries. In Brazil, it had trained 150,000 entrepreneurs.

15. SAB Miller presented its experience, proving there were advantages and a case for big companies to develop SMEs which participated in their value chains, in a type of partnership.

16. Experts discussed awards as a way to increase awareness of entrepreneurship and to impact positively the attitude of societies towards entrepreneurs. It was noted that prizes and contest at school could help to mainstream skills of creative thinking. Awards should be used at the local, national, regional and global levels. One example of such global awards and one of the oldest was “Entrepreneur of the Year” of Ernst and Young. That prize covered more than 10,000 entrepreneurs, more than 135 cities, more than 50 nations, 6 continents and every cycle over the last 18 months. Once they passed the national level, a jury independent from Ernst and Young or from the sponsors made the calls based on the following criteria: entrepreneurial spirit, financial performance, strategic direction, community/global impact, innovation, personal integrity and influence. Among the incentives for participating entrepreneurs were prestige and global networking opportunities. By its nature, “Entrepreneur of the Year” had a good coverage in the media (particularly where the programme is relatively new) and wielded influence with Governments.

17. The expert from Ernst and Young also said that different Ernst and Young chapters conducted zero-cost direct support to entrepreneurship projects in developing countries. For example Ernst and Young Switzerland supported entrepreneurship projects through Prabina Foundation in Nepal.

18. Experts highlighted the necessary university–industry–government interaction (triple helix model) as key to innovation. They said that people tended to forget the origins of successful or even heroic entrepreneurship or innovation, but almost always found a collective effort, most of the time triple helix in nature. They pointed out the trend towards an increasingly interconnected economic environment, where the roles and competencies of these three stakeholders overlapped. For instance, universities were no longer simply knowledge and skill producers, but also firm founders through incubators. Industry could be an educator through company training programmes, and government programmes could provide venture capital.

19. Like education and research, transfer of technology and firm formation should be part of the mission of Universities. In Brazil, there are examples of this in the Pontifícia Universidade Católica do Rio de Janeiro through its institute PUC-Rio

and the Universidade de São Paulo. It is worth mentioning that the incubation model in Brazil was adapted by professors and graduates coming back from attending visits and studies abroad, after the import substitution model were abandoned and industrial parks went down in the 1970s.

20. As an element to universities' adaptation to the twenty-first century, the term *Novum Trivium* was proposed, which had a historical antecedent in the Tripos degree introduced by Cambridge University in the nineteenth century. The Cambridge model could be taken a step further by proposing a degree programme that brought together three diverse skill sets, drawing from: arts, science and technology; language and culture; and innovation, entrepreneurship and regional development.

21. There was a debate whether non-governmental organizations (NGOs) constituted the fourth helix in the model. NGOs and foundations hade played roles in all areas of entrepreneurship, including awareness creation, knowledge distribution and business network promotion. A good example was the Kaufmann Foundation and its rich programmes on entrepreneurship, including the "Global Entrepreneurship Week".

22. The role of Governments, according to experts, should be to guarantee the rule of law as a necessary condition to innovation and entrepreneurship. It should include protection of freedoms and facilitate networking among actors in the triple (fourth?) helix model. It could include also promoting or funding incubators, providing seed money. When it came to institutional arrangements, Governments were better off when they mandated independent entrepreneurship institutions with the responsibility of promoting it, and not making such tasks themselves. The importance of foundation, finance and failure policies was discussed. A pending question was which countries – in addition to the United States – provided safety network policies when there was a failure?

23. Some of the discussions centred on the role of governance, the importance of including key stakeholders in entrepreneurship strategies and the need to adapt exemplary practices therein to local realities. Also, the role of incentives in promoting innovation and entrepreneurship was highlighted. It was recognized that, in general, implementation of any of the exemplary practices took time to bear good results and that losses or failure could occur. For example, Bangalore took over two decades to develop into a major hub of innovative firms. The case of a "Techno Park" in Zurich (a well-connected and developed city) which had taken 10 years to develop was also cited. Then, the natural question was how to speed up such developments? The group did not find any magical answer but guessed that social networks and information and communications technology (ICT) tools could prove catalytic.

24. It was also pointed out that entrepreneurs were not just top executives or founders of firms, but also individuals who created "entrepreneurial institutions", which in turn facilitated firm formation and growth. Some of these could have been leaders of institutions that had initiated industrial clusters, science parks and venture capital firms.

25. Experts agreed on the need to evaluate innovation or entrepreneurship frameworks. Such evaluation could be simple. Experts also considered that any entrepreneurship-promoting framework should be acceptable to the private sector, provide interlinkages and be self-sustainable.

26. The second session focused on the design, implementation and evaluation of an entrepreneurship policy framework. One expert highlighted the importance of a regulatory framework in promoting entrepreneurship, especially the rule of law,

taxation issues and access to markets. In addition**,** the importance of business incubators and networks was emphasized for the promotion of entrepreneurship. For example, I3P (Incubatore Imprese Innovative del Politecnico) S.c.p.A. – Torino, Italy was able to catalyze networking between entrepreneurs, investors, banks, business angels and consultants. Screened companies benefited from preferential financial terms from banks. One expert highlighted the elements for nurturing university innovators and entrepreneurs by linking students to knowledge centres, academia to business and industrial networks, and potential entrepreneurs to funding agents. That could be facilitated by supportive and clear commercialization regulations and intellectual property policies. Universities could also offer awards to students with commercially viable business ideas. The challenges of moving from an agriculture-based economy to a knowledge-based economy (skipping industrialization) were also addressed by experts, and it was noted that a special approach had been developed in one region of Spain, Andalucía. Lessons learnt there could be disseminated elsewhere.

27. It was noted that the impact of the Brazilian entrepreneurial policy framework on firm formation and growth through group assistance (e.g. clusters, associations, incubators, business linkages, etc.) had provided good results. For instance, by enabling SMEs to access government procurement, using the United States model, Brazil had recorded good results in SMEs' growth and expansion. Other elements of the Brazilian policy included raising awareness through entrepreneurship and innovation awards, providing special incentives for individual micro-entrepreneurs, and offering programmes for youth and entrepreneurship training. Experts also stressed the importance of policy coherence, coordination, monitoring and evaluation in implementing an entrepreneurship policy. The example was raised of the development of a State policy in Brazil with specific and coordinated targets that interacted with the entrepreneurship policy. The UNCTAD–GTZ–SEBRAE (Brazilian Service of Support for Micro and Small Enterprises)–SENAI business linkages project, in the Brazilian State of Pernambuco, showed another example of how different agencies were working together to promote innovation and entrepreneurship. This had enabled SMEs to integrate further in the supply chain of large firms and upgrade their production and management standards. Some experts stressed the need to differentiate between sectors and between existing SMEs and start-ups when designing entrepreneurship policies. The issue on how to proceed with the informal sector was raised, given its overwhelming importance in many countries; a preliminary and partial answer as to how to convince them of the advantages of entering the formal sector was offered.

28. Regarding the work of international organizations, the Organization for Economic Cooperation and Development (OECD) provided an overview of the activities undertaken by the working group on SMEs. The OECD Bologna Process on SME and Entrepreneurship Policies was a significant milestone for small business and entrepreneurship policymaking. The outcome of the Bologna Charter on SME Policies conference proposed a coherent approach to SME policies, with a view to stimulating economic growth and social development, both in OECD countries and the rest of the world. Among other initiatives promoted by the group were research and international conferences on SMEs integration into global value chains, SME financing and the development of statistics on entrepreneurship for international comparisons. Its recent publication, "Measuring entrepreneurship: a digest of indicators", included entrepreneurship indicators for 18 countries collected in collaboration with Eurostat and the Kaufmann Foundation, and the evaluation and exchange of good practices. OECD was also addressing the impact of the current financial crisis on SMEs. The Memorandum of Understanding signed between UNCTAD and OECD was highlighted as an example of the conduct of joint research on entrepreneurship and SME enterprise development. Regarding the

memorandum, some experts expressed the need to increase the visibility, goals and results of collaborations like this.

29. An expert from the International Labour Organization provided information about that organization's work promoting entrepreneurship, and described the core elements of SME development and training needs. He stressed the need for targeted government incentives to support marginalized members of society and overcome market failure. The expert also presented a framework of the Donor Committee for Enterprise Development for diagnosing, designing, implementing and evaluating business environment reforms contained in the publication "Supporting Business Environment Reforms. Practical Guidance for Development Agencies". The guidance identified four key reform phases: diagnostic, solution design, implementation and evaluation, and sustainability. He added that donors were good at diagnosing, but rarely was the design of solutions clearly linked to the problems found, and evaluations tended to report on activities instead of measuring impacts and results out of business reform. It also contained 15 principles agreed upon by the committee. The committee's future work included private sector development in post-conflict areas, the business environment and the informal economy.

30. Experts raised the issue of promoting better coordination among international organizations that were promoting entrepreneurship. However, it was noted that entrepreneurship was a multi-disciplinary field that could not be addressed comprehensively by only one organization or government department. Further, under the One United Nations initiative, several agencies were cooperating to deliver as one in providing technical support to Governments and through partnership agreements (e.g. the Paris Declaration and the UNCTAD–OECD Memorandum of Understanding).[3]

31. The expert from the National Collegiate Inventors and Innovators Alliance (NCIIA), a network of more than 300 universities and colleges, constituted as an NGO, presented the work that they have being doing since its foundation in 1995 to foster invention, innovation and entrepreneurship in higher education as a way of creating innovative, commercially viable and socially beneficial businesses and employment opportunities in the United States.

32. It was noted that NCIIA had advocated confronting universities with existing global challenges such as poverty, climate change, access to water, and the scarcity of leadership in technical entrepreneurship, among others. NCIIA encouraged opportunities for faculty and students to take up those challenges, supported the implementation of creative entrepreneurial solutions and promoted models that created long-term responses to pressing social needs by fostering the understanding of consumer needs in diverse settings, the pursuing of economically viable solutions and the diffusion and application of technology solutions.

33. To support emerging university entrepreneurs, NCIIA found it necessary to conduct actions in the areas of development of the key elements of an "Entrepreneurial Ecosystem", creation of enabling frameworks, validation of successes and recognition of leadership, while keeping its focus on social impact.

34. Within the enabling frameworks area, the expert put forward some specific recommendations such as (a) the need to align intellectual property between the inventor and the institution; (b) the sabbatical entrepreneurial for faculty or the formal graduate level studies with the purpose of forming a company to align incentives between the academic and entrepreneurial communities; and (c) the importance of identifying and recognizing leadership – through local low-level engagement, low-level risk initiatives and rewarding successes, not only with

[3] Note of the Chair: Due to lack of time, the One United Nations initiative was not challenged nor discussed.

money – as students move along. The expert also presented successful cases which the reader can find in his presentation.

35. Finally, the NCIIA Executive Director asked if UNCTAD would be prepared to partner with NCIIA in the DR100 entrepreneurial programme to replicate NCIIA work at the global level – that is, to (a) engage universities around the world; (b) identify leaders within; (c) develop frameworks; (d) share exemplary practices, curriculum resources, and online education resources; (e) conduct programme development activities; (f) train faculty, either by partnership or mentoring, with the final aim of having a network of entrepreneurial development programmes funded by local communities within countries, to invent a better world through nurturing university innovators and entrepreneurs at the global level.

36. The third session explored the concept of open innovation and how open collaborative approaches to innovation could promote entrepreneurship and the competitiveness. One expert put the following definition on the table: "Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation respectively".[4] In the ensuing discussions, two issues were dominant: (a) the relevance of open innovation to the economies of developing countries; and (b) managing intellectual property and issues related to capacity.

37. As such, open innovation was clearly labelled as a (business) strategy. There were questions about the relevance of open innovation to small economies and low-income developing countries and to North–South cooperation. It was pointed out that some developing countries were already engaged in open innovation systems. Developing countries could benefit from open innovation, for example, by in-licensing technology for which they found innovative applications or business models. Moreover, developing and developed countries would benefit more from open innovation by bridging their respective digital divides.

38. From 80 per cent to 90 per cent of patents were not in use by their owners. Competitiveness and globalization were giving firms relying entirely on in-house research a hard time. As an alternative, they could buy or license processes or inventions from other companies to be at the forefront of innovation and at the same time make their internal inventions that were not being used available to other companies through, for example, licensing and spin-offs. Open innovation could also alleviate brain drain, push down entry barriers, and facilitate transfer of technology and insertion in world value chains.

39. Some experts were concerned that the concept of research and development (R&D) had too often been equated with innovation. Innovation was not only high-tech, as shown by the examples of the mud-guard of Curana, the eco-radiator of Jaga or the electric bike in China. Several participants suggested that for innovation to be relevant to developing-countries economies, it had to be seen as the successful introduction of useful products and new value. For that reason, R&D or technology had to be accompanied by the acquisition of knowledge and tapping into the knowledge of other institutions, such as universities and other firms – including competitors – to accelerate their own capabilities to innovate. One participant, however, stressed that, although R&D was not necessarily the same as innovation, innovation very much depended on R&D.

40. Engaging in collaborative R&D and open innovation activities with other firms – through in- and out-licensing of intellectual property rights – could be tricky. In fact, one of the biggest barriers to open innovation was the risk of intellectual property theft. Therefore, updated regulatory frameworks were needed

[4] Chesbrough V (2006). West Open Innovation: Researching a New Paradigm (Oxford).

that not only covered protected and defended, but also allowed sharing and collaboration. Out-licensing of intellectual property required good organizational structures to collaborate effectively and share information. Yet firms had to manage intellectual property in order to manage research. That way, the firm could access external intellectual property, benefit its business model, and profit from its own intellectual property in others' business models.

41. The meeting addressed issues pertaining to intellectual property rights, increasing the intensity of R&D and actively attracting leading researchers. Among the wider policy issues that were discussed were local infrastructure, investment incentives, favourable regulatory frameworks and helpful administrative processes. Developing countries, they argued, must be helped to set up processes and build capacity to negotiate agreements for them to become effective innovators.[5]

42. Several experts were of the opinion that – although most innovation was built on a body of knowledge and science – the process of innovation followed a closed model and could follow an open innovation model[6] and its evolution would continue. They urged the secretariat to develop a system to track policies, as well as their evolution and impacts. That, it was suggested, could be executed in a collaborative effort between the secretariat and the country representatives. The cooperation between UNCTAD and other relevant players was seen as an important link to disseminating relevant experiences among developing countries.

43. It was noted that open innovation efforts were often not successful because they required a different mindset and a positive attitude towards cooperation. Participants were also reminded that, even though technology was tradable, it did not necessarily give a buyer of technology the needed edge. Rather, it was the business model that made the difference. So far, open innovation was the exclusive domain for larger enterprises and firms. Yet, small start-ups and SMEs could still compete by offering attractive stock options to leading researchers.

44. Several participants pointed to the misconceptions about open innovation. The term itself perhaps wrongly suggested free access to innovation. In reality, however, it involved significant transaction costs for maintaining individual relationships, and building and maintaining networks and skills.

45. The benefits from firms that commercialized technologies through external agents – e.g. through creating and spinning out new ventures and licensing intellectual property to external parties – were discussed. They could either enter arms-length agreements with third parties to develop new technology – i.e. outsourcing of R&D – or engage in in-licensing of intellectual property. It was noted that a firm did not have to own the research to profit from it.

46. It was felt that strong R&D centres could improve their effectiveness with an open innovation strategy using in–out licensing, targeted mergers and acquisitions; external collaborations were seen as important aspects to increasing the potential for open innovation. That, however, needed a strong internal team of researchers linked up with external firms, research institutions and projects. That team had to be in a position to judge whether or not the research being undertaken by partners was valuable.

47. Several participants thought it was important to follow the developments on open innovation, for several reasons. One was the steady move towards a new

[5] Note of the Chair: Although countries can engage in negotiations with firms directly, it is not clear how countries will participate in negotiations, which most of the time are between private sector actors.

[6] Closed innovation referred to processes that used internal know-how and made little use of external knowledge, while open innovation was the direct opposite of the vertical integration model, where products were a result of internal R&D activities. Open innovation also assumed that internal ideas could be marketed to generate additional value.

division of innovation labour. That evolution brought about a force that was well-trained, competent and mobile. Universities were becoming more entrepreneurial. Knowledge was becoming easily accessible throughout the world. The erosion of oligopolistic market positions and trade liberalization contributed to promoting open innovation.

48. The final session of the meeting focused on the use of technology, innovation and entrepreneurship for poverty reduction. The development of a country's technological, innovation and entrepreneurship capabilities, and their ability to access needed technologies, were key elements to support high and sustainable economic growth rates in the long term. An STI strategy – integrated into the broader national development strategy, comprising policies aimed at strengthening those capabilities and at building effective systems of knowledge and innovation – could play an important role in creating new opportunities for entrepreneurs, improving national economic performance and reducing poverty. A well-designed STI strategy and appropriate STI policies were needed, but it was important to note that some key policy issues were still relatively poorly understood, and some traditional approaches to promoting innovation needed to change.

49. One expert presented the experience of Micro-Enterprise Acceleration Institute (MEA-I), an international, non-profit organization that facilitates access and knowledge of ICT. He signalled that microenterprises were the biggest source of new jobs globally, therefore MEA-I through its Micro-enterprise Acceleration Program (MAP) had the goal to effectively reach microenterprises around the world and provide them access to technology and ICT training to help them grow their businesses and sustain that growth over time by partnering with local agencies. As of January 2009, MAP was present in 46 centres in 17 countries, mainly in Europe, but they were planning to grow exponentially in all regions in the following years. The MAP solution included a fully operational, ready-to-go training centre, 20–module curriculum (40–60 hours of training), professional training of trainers and master trainers, membership in the MAP network, access to an online platform, and a sustainability toolkit and coaching.

50. Experts noted that countries should support a diverse enterprise structure with a mixture of microenterprises, SMEs and large firms. Several experts highlighted that microenterprises and SMEs were often faced with disadvantages regarding deficient access to finance, markets, technology and information, along with weak skills, and therefore required public policies to support their growth and development. That goal was complicated because many developing country micro-entrepreneurs and microenterprises were in the informal sector, and there remained great uncertainty about how best to support that sector. There was consensus that supporting microenterprises was important, because the social returns were high, thanks to the potential impact on poverty reduction, while medium-size enterprises might be the most innovative and also merited support. SMEs in general provided high social returns because they created additional employment. Moreover, micro, small and medium enterprises' concepts were different in different countries. For example, in Bangladesh, there were 15 million microenterprises operating on a $100 revolving credit. It was also noted that achieving growth of enterprises from micro to small, and from small to medium size, was an ideal goal.

51. In the experience of one expert, the coaching of a new entrepreneur to become an exporter took five years of engagement with one year of coaching per exporter, so as to have five exporters in five years, six in six years, etc. He concluded that direct donor financing to SME might not be appropriate.

52. The discussions on public support programmes for entrepreneurship and microenterprise and SME development illustrated that the experience in several

countries had been mixed, with both successes and failures encountered, and that a long-term commitment by policymakers (over 20 years or more) was required to build the needed capabilities.

53. One expert said that the Internet as a medium was also revealing new difficulties related to trade, work and other matters. The sense was that the world was at a moment where it understood that the legal and regulatory framework needed to cover its electronic life. However, given the borderless nature of the Internet, its development and harmonization would be slow and challenging. At the end, those frameworks would help people to deal with the difficulties cited.

54. One expert focused on agriculture. Agriculture in developing countries was different from manufacturing in that it generally consisted of very large numbers of micro-entrepreneurs. Agriculture remained key for many developing countries as a channel for reducing poverty, given that the bulk of poverty in the developing world was rural. Building agricultural innovation in developing countries would be important to reduce poverty. So would providing access to technologies that farmers could use to solve their particular problems, and embedding farmer-owned enterprises in wider knowledge and innovation systems that supported them by innovating continuously over time. It was suggested that the traditional research- and technology-led approach to innovation in agriculture had to change. A new innovation paradigm should recognize that there was diversity in the innovation arrangements that could be used in developing countries to build innovation capabilities. Agricultural research needed to be better connected to the needs of entrepreneurs and enterprises. One suggestion was that agricultural technology brokers would be more useful than the traditional agricultural extension services used in many developing countries. However, several policy questions remained open, including how to best foster entrepreneurship for agricultural innovation in a largely informal sector of micro-entrepreneurs. The use of cooperatives had a mixed record, with more failures than successes. Another key open policy question was what models of farmer-operated enterprises worked well, especially for poverty reduction. The expert offered two isolated and different examples: he called the first an opportunity-driven model case, a collaboration between companies from the United Kingdom and Uganda based on equitable commerce; the second, which he called a self-organizing system,[7] concerned the "New Rice for Africa" (Nerica) in Benin, where entrepreneurial endeavours (rather than the public sector technology promotion efforts) were the driver of a series of innovations needed to spread the adoption of this new rice variety. It was also offered as an example to illustrate that research towards innovation should not be done in isolation, with the case of substitution of wheat flour by sweet potatoes, which was a catastrophe in the absence of participation from bakers and others. It was suggested that policymakers should strengthen their intelligence-gathering capacities to better understand promising developments in the informal sector, and in agriculture and rural development more generally.

55. An expert presented a pro-poor mobile application: the cheapest mobile phone was as powerful as a 1969 NASA supercomputer. Mobile telephone technology in some developing countries had a large impact in facilitating business operations by microenterprises and micro-entrepreneurs in agriculture and fisheries, among others. It had also opened new opportunities for micro-entrepreneurs by providing information networking platforms, as the example of CellBazaar in Bangladesh illustrated. CellBazaar was incorporated in the United States to increase trust among investors. That type of mobile telephone-based network might be replicable in some other developing countries, although the specific conditions varied greatly by

[7] Note of the Chair: It may be more precise to call it "Spark multi-stakeholder spontaneous collaboration".

country, which would place limits on its general replicability. Even if the company were willing to share its expertise to be copied by another, the appeal of the model might be inversely proportional to the availability of PCs and the Internet. Other programmes to support microenterprises and SMEs through information and communication technology were also discussed and there were some networking possibilities that emerged from those exchanges. Several national programmes on STI development for microenterprises were discussed with the conclusion that, while certainly important, the issue of how to produce success was complicated and not yet clearly understood. Several experts warned that there was a danger of concentrating too heavily upon high-tech to the neglect of more basic technologies that were nevertheless critical for economic progress in developing countries. Agro-processing technologies – which were central to raising value added by agricultural entrepreneurs and for escaping poverty – were used as an illustration.

56. Experts during the session dealt with the innovation concept as in the following definition: "Innovation is to begin or introduce something for the first time. Innovation is always relative", by Scott Berkun, presented in the "Myths of Innovation" GoogleTechTalk of 8 October 2007. Experts also preferred to use "exemplary practices" instead of "best practices", because the former conveyed the idea of adaptation when replication was to take place, whereas the latter could be interpreted as if there were a unique universal best way of doing things, regardless of place or time.

57. The Chair referred throughout the meeting to the "developing countries aggregation". Such a concept might not pass a variance analysis; therefore, it might be misleading when used either in diagnostic, solution design, implementation and evaluation or sustainability.

II. Practical options and actionable outcomes

58. In accordance with paragraph 207 of the Accra Accord, "Expert meetings should be interactive and enable all experts to participate fully; they should encourage sharing of experience and best practices; and they should facilitate networking among experts. They may generate, as part of the report of the Chair, practical options and actionable outcomes for consideration by the commissions, such as inventories of best practices, checklists, indicative guidelines, sets of criteria or principles, and model frameworks."

A. Recommended topics for the next three multi-year expert meetings

59. Suggested topics for the next three multi-year expert meetings included the following:

(a) From the evaluation based on indicators to policy frameworks for entrepreneurship and small and medium-sized enterprise (SME) development and innovation – firm foundation, growth, finance and failure;

(b) How to encourage innovation and entrepreneurship through education at all levels: the role of educational and research institutions in preparing innovative and entrepreneurial leaders (preparing the next generation of innovators and entrepreneurs);

(c) Leveraging innovation and technology for development: pro-poor entrepreneurship, innovation and technology – particularly for women and the next generation of leaders – and examination of the roles of business linkages and global value chains to support pro-poor measures.

B. Recommendations for inter-sessional work

60. Recommendations for inter-sessional work included the following:

(a) **Networks:** It was recommended that networks be established on specific issues of interest to the expert group, particularly for the suggested topics in section A above. Also, one such network would consider the use of the Delphi Method to draft – by next year's meeting– a comprehensive document on entrepreneurship and innovation in public policies, which would include exemplary practices and other issues, such as innovation governance, firm foundation, finance and failure, among others;

(b) **Voluntary peer reviews:** After May 2010, there could be, based on the document described above, experts willing to conduct peer reviews on enterprise development policies and innovation;

(c) **Inventory:** Given the number of useful ideas, contributions and programmes presented by experts at the first session of the multi-year expert meeting, it could be useful to create an inventory. This inventory would be disseminated (e.g. posted online) and could serve as a clearing house to try to connect those who would like to expand their programmes with other experts from the group;

(d) **Commitments:** The managers of I^2BC, a non-profit, semi-public organization, proposed committing to the establishment of an "innovation observatory";

(e) **Proposals for cooperation:** It was suggested that experts who were interested in working on and learning more about the issues dealt with in the meeting could cooperate with the programmes listed below. Experts who were responsible for these programmes were asked to clarify what they were offering or asking for. These programmes could also be kept in the above-mentioned inventory. They include:

(i) The Kauffman Foundation, which shares the experts' experience and work on entrepreneurship and innovation policy, research and statistics (including collaboration with the OECD's Entrepreneurship Indicators Programme), and knowledge and practices on entrepreneurship education and advancing innovation;

(ii) Endeavor, which breaks down barriers that prevent emerging market entrepreneurs from reaching their high-impact potential; entrepreneurs are given world-class strategic advice, access to key networks and other tools that will catapult them to success;

(iii) The National Academy of Sciences will be ready to explore and collaborate on the topics of STI taken up by the group;

(iv) Empretec is ready to collaborate with any interested State Member;

(v) The National Collegiate Inventors and Innovators Alliance (NCIIA), which shares information (curricular models, materials, videos, etc.) on innovation and entrepreneurship education, online seminars and workshops, and invites engagement in a global network of university innovators;

(vi) SEBRAE (Brazilian Service of Support for Micro and Small Enterprises), which shares information, knowledge and approaches to SME support services and entrepreneurship fostering and training programmes (e.g. Empretec);

(vii) SENAI, which shares learnt lessons on its business linkages programmes; and

(viii) The Asia–Pacific Economic Cooperation (APEC) Center for Technology Foresight, which shares experiences and networks on foresight methodologies (e.g. scenario-building, the Delphi Method and technology road mapping), as well as the findings from various APEC-wide foresight projects;

(f) **Identified frameworks:** These are proven and successful framework models to foster entrepreneurship or innovation:

(i) Endeavor;

(ii) SBIR, United States;

(iii) Fundación Chile;

(iv) The International Institute for Triple Helix Innovation (Madrid);

(v) Empretec, UNCTAD;

(vi) Earth University, Entrepreneurial Projects Programme, Costa Rica;

(vii) Enterprise Uganda, Empretec;

(viii) Donor Committee for Enterprise Development;

(ix) National Science and Technology Development Agency, NSTDA.

(g) **Dissemination:** The various inputs provided by the expert group should be uploaded on UNCTAD's website (and in the e-forum) as appropriate. The summary of the first session of the multi-year expert meeting, as well as other inputs provided by the Chair of the expert group, should be disseminated among UNCTAD member States.

III. Organizational matters

A. Election of officers

61. At its opening plenary meeting, the multi-year expert meeting elected the following officers:

Chair:	Ambassador Miguel Angel Alcaine Castro (El Salvador)
Vice-Chair-cum-Rapporteur:	Ms. Ann M. Low (United States of America)

B. Adoption of the agenda and organization of work

62. At its opening plenary, the multi-year expert meeting adopted the provisional agenda for the session (contained in TD/B/C.II/MEM.1/1). The agenda was thus as follows:

1. Election of officers
2. Adoption of the agenda and organization of work
3. Enterprise development policies and capacity-building in science, technology and innovation
4. Adoption of the report of the meeting.

C. Outcome of the session

63. At its closing plenary meeting, on Thursday, 22 January 2009, the multi-year expert meeting agreed that the Chair should summarize the discussions (see chap. I).

64. Fulfilling the mandate contained in paragraph 207 of Accra Accords, experts agreed to discuss and include “Practical options and actionable outcomes” in this document (see chapter II)

D. Adoption of the report

65. Also at its closing plenary meeting, the multi-year expert meeting authorized the Vice-Chair-cum-Rapporteur, under the authority of the Chair, to finalize the report after the conclusion of the meeting.

E. Other business

66. At the closing ceremony, the Bureau suggested to the meeting that the country holding the vice presidency, the United States of America, could take the presidency for the meeting in 2010 and State members could seek a vice presidency for a developing country from a group that has not participated in the Bureau. The following year, a similar rotation should take place. If this suggestion would be accepted, it would work in favour of continuity and rotation.

F. Final comments of the Chair after finalizing this report

67. A rough calculation of out-of-pocket costs for the meeting (expert salaries, travel tickets, hotels, UNCTAD costs, conference services, etc.) might be $200,000. Opportunity costs may be higher.

Annex I

Index of the summary of discussions

Paragraph No.	Subject
49.	MEA-I Micro Enterprise Acceleration Programme: business and ICT
50.	Enterprise sizes: microenterprise and SMEs needs
51.	Coaching entrepreneurs towards exporting
52.	Long-term commitment of policymakers to microenterprises and SMEs
53.	Internet
54.	Agricultural innovation
55.	CellBazaar: an innovative pro-poor mobile application
56.	Innovation concept: exemplary practices concept
57.	False “developing countries” aggregation

Annex II

Web resources

A. Frameworks

1. **Endeavor**
   http://www.endeavor.org
2. **Endeavor Brazil**
   http://www.endeavor.org.br/
3. **SBIR, United States**
   http://www.sbir.gov
4. **Fundación Chile**
   http://www.fundacionchile.cl
5. **Empretec, UNCTAD**
   http://www.empretec.net
6. **Enterprise Uganda**
   http://www.enterprise.co.ug
7. **SEBRAE, Brazil**
   http://www.sebrae.com.br
8. **SENAI, Brazil**
   http://www.senai.br
9. **Institute PUC-Rio, Brazil**
   http://www.puc-rio.br
10. **NCIIA**
    http://www.nciia.org/
11. **MEA-I**
    http://www.mea-i.org/
12. **Earth University Entrepreneurial Projects Programme (Framework), Costa Rica**
    http://www.earth.ac.cr/ing/progacad_lic_pro_empresarial.php
13. **Experience in I3P (Incubatore Imprese Innovative del Politecnico) S.c.p.A. Torino, IT**
    http://www.unctad.org/sections/wcmu/docs/c1mem1_p21_en.pdf
14. **NSTDA**
    http://www.nstda.or.th/en/
15. **Donor Committee for Enterprise Development**
    http://www.enterprise-development.org
16. **Supporting Business Environment Reforms: Practical Guidance for Development**
    http://www.enterprise-development.org/download.aspx?id=586
17. **The Innovation Hub, South Africa**
    http://www.theinnovationhub.com/
18. **MuCSAT, Egypt**
    http://www.mucsat.sci.eg

B. Other material

1. **Home Page of this multi-year expert meeting**
   http://www.unctad.org/Templates/meeting.asp?intItemID=4714&lang=1&m=15
2. **The International Institute for Triple Helix Innovation**
   http://www.ncl.ac.uk/nubs/research/centres/triplehelix/
3. **Kaufman Foundation**
   http://www.kauffman.org/
4. **OECD, Science and Technology Policy Division**
   http://www.oecd.org/sti/innovation
5. **ILO Small Enterprise Program**
   http://www.ilo.org/seed
6. **CellBazaar**
   http://www.cellbazaar.com
7. **"Global Entrepreneurship Week"**
   http://www.unleashingideas.org
8. **La Confederación de Entidades Para la Economía Social de Andalucía**
   http://www.cepes-andalucia.es/
9. **"Measuring entrepreneurship: a digest of indicators" – OECD**
   http://www.oecd.org/document/31/0,3343,en_2649_34233_41663647_1_1_1_1
10. **Ernst and Young Entrepreneur of the Year**
    http://eoy.ey.com

Annex III

Attendance*

1. Representatives of the following States members attended the session:

Algeria
Angola
Argentina
Azerbaijan
Bangladesh
Botswana
Bulgaria
Burkina Faso
Burundi
Canada
China
Croatia
Czech Republic
Democratic Republic of the Congo
Dominican Republic
Ecuador
El Salvador
Ethiopia
France
Germany
Ghana
Greece
Haiti
India
Indonesia
Iran (Islamic Republic of)
Israel
Italy
Jamaica
Madagascar
Mali
Mauritius
Mexico
Morocco
Mozambique
Namibia
Nepal
Nicaragua
Nigeria
Norway
Peru
Philippines
Poland
Qatar
Romania
Russian Federation
Rwanda
Saudi Arabia
Slovakia
Spain
Switzerland
Syrian Arab Republic
Thailand
Trinidad and Tobago
Uganda
Ukraine
United Arab Emirates
United States of America
Venezuela (Bolivarian Republic of)
Yemen
Zimbabwe

2. The following intergovernmental organizations were represented at the session:

African, Caribbean and Pacific Group of States
African Union
Agency for International Trade Information and Cooperation
European Community
Organisation internationale de la francophonie
Sistema Económico Latinoamericano y del Caribe
South Center

3. The following United Nations organization attended the session:

International Trade Centre

*For the list of participants, see TD/B/C.II/MEM.1/Inf.1.

4. The following specialized agencies or related organizations attended the session:

International Labour Organization
United Nations Educational, Scientific and Cultural Organization
United Nations Industrial Development Organization
World Intellectual Property Organization
World Tourism Organization

5. The following non-governmental organizations were represented at the session:

General Category

BPW International
Ingenieurs du monde
International Chamber of Commerce
Village Suisse ONG

6. The following associations and organizations were invited to the expert meeting as observers;

Empretec Benin
Empretec Colombia
Empretec Ethiopia
Empretec Ghana
Empretec Nigeria
Empretec Zimbabwe
ProInvest

7. The following representatives of academies and the private sector were invited to the expert meeting:

Mr. Marco Cantamessa, President, Incubatore di Imprese Innovative del Politecnico di Torino
Mr. Heinrich Christen, Partner, Industry Leader Medical Devices, Ernst and Young
Mr. Sanjay Mungur, Managing Director, EMS Consulting, Mauritius
Mr. Deniz Saral, Chair, School of Business and Technology, Webster University, Geneva
Mr. Leif M. Sjöblom, Professor of Financial Management, IMD Business School
Ms. Karen Wilson, Founder, GV Partners, Senior Fellow, Kauffman Foundation
Mr. Stephen Young, Professor of International Business, University of Glasgow
Mr. Andrea Zaninetti, Chef de Projet, GENILEM Afrique

8. The following panellists were invited to the expert meeting:

Mr. Carlos Ferraro, Former Vice Minister, Ministerio de Producción, Peru
Mr. Charles W. Wessner, Director of Technology, Innovation and Entrepreneurship, United States National Research Council
Ms. Elmira Bayrasli, Vice President of Partnerships, Policy and Outreach, Endeavor
Mr. Charles Ocici, Executive Director, Enterprise Uganda
Mr. Henry Etzkowitz, Professor, Chair Triple Helix, Business School, Newcastle University

Mr. Heinrich Christen, Partner, Industry Leader Medical Devices, Ernst and Young
Mr. Jacques Augustin, Chair, OECD Working Party on SMEs and Entrepreneurship
Mr. Martin Clemensson, Team Leader, Small Enterprise Development (SEED), ILO
Mr. Vinicius Nobre Lages, Manager, International Assistance Unit, Sebrae
Mr. Phil Weilerstein, Executive Director, National Collegiate Inventors and Innovators Alliance
Mr. Marcelo Dantas, Director, Technology and Innovation Department, SENAI, Pernambuco
Mr. Eric Leong, Supply Chain Manager, SAB Miller Africa and Asia (PTY) Ltd.
Mr. Wim Vanhaverbeke, Professor of Strategy and Organization, University of Hasselt, Belgium
Mr. Stephan Mumenthaler, Head Economic Affairs, Novartis International AG
Mr. Mario Cervantes, Science and Technology Division, OECD
Mr. Kamal Quadir, CEO and Founder, CellBazaar Inc. (Bangladesh)
Mr. Andy Hall, Senior researcher, UNU–MERIT
Mr. Yves de Préville, Partnership Development, Micro-Enterprise Acceleration Institute

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First session
Geneva, 20–22 January 2009

Report of the multi-year expert meeting on enterprise development policies and capacity-building in science, technology and innovation (STI) on its first session

Held at the Palais des Nations, Geneva, from 20 to 22 January 2009

Corrigendum

Paragraph 27

The last sentence *should read*

The issue of how to proceed with the informal sector was raised, given its overwhelming importance in many countries; a preliminary and partial answer was to convince them of the advantages of entering the formal sector.

Paragraph 42

The first sentence *should read*

Several experts were of the opinion that – although most innovation was built on a body of knowledge and science – the process of innovation had previously followed a closed model and at the present time could follow an open innovation model, and the evolution of the process of innovation would continue.