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Palestine Economic Policy Research Institute

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The Palestine Economic Policy Research Institute –MAS- engages in the publication of applied research papers and studies related to the Institute's program in the area of economics and social science and conducted by full or part time researchers.

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3. The internal scientific committee supervises the work of the researcher or team of researchers through periodic progress reports.
4. The initial draft of the study is reviewed by the scientific committee for objective content-related amendments to be added to the second draft.
5. The second draft is then submitted for evaluation in accordance with the terms of reference to two or three external academic experts specializing in the subject. Provided that there is a positive evaluation by at least two experts, the researcher is asked to review the study taking into consideration the objective recommendations of these experts.
6. The study is presented for discussion at a public workshop attended by academics, researchers, and representatives from public and private sector institutions related to the subject of the research.
7. Comments and feedback from the workshop are incorporated into the study and the final draft is reviewed by the scientific committee to ensure that the necessary amendments have been made. The study is then edited.
8. Research papers written in English are translated into Arabic and published in both languages. An executive summary in English is attached to research papers written in Arabic.

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Abstract

This study aims to identify the major aspects of the information technology industry, particularly software as one of the most important branches and the most promising in terms of its potential as an export both now and in the foreseeable future.

There are 61 firms involved in the information technology industry, including software, database, and consultancy services. Software firms are small in size and depend totally on the Palestinian domestic market for sales. They have a low capital-labor ratio, high wages and are concentrated in the Ramallah area. In addition to software production, software firms are also involved in other activities, particularly customized and general applications. Despite great hopes for the IT industry and numerous public and private initiatives to develop, support and strengthen its role in the Palestinian economy, at present the sector remains marginal in terms of its contribution to gross domestic product (GDP) and to employment.

The experience of other countries shows that the most important factors for success lie in the availability of a well-trained, affordable, and qualified workforce; government policies to support IT research and development; public financial incentives and programs to encourage investment; effective supportive institutions; in addition to international cooperation in production research, development, and marketing.

The software industry differs from other sectors in a number of ways and this has contributed to the creation of both opportunities and challenges. It has become a global industry in terms of production, investment, and marketing. In advanced countries, it suffers from a shortage of human skills to meet growing international demand for software products. Other factors are a high degree of segmentation, a decline in the importance of geographic location for production, a rise in risk factor, high-income elasticity of demand for software, low entry barriers into this industry, and the growing importance of after-sales and support services.

Given the special importance of software in all economic and social activities, governments are encouraging the software industry, even in advanced capitalist countries. The Palestinian National Authority (PNA) has devoted great efforts to promoting the IT industry, including software. There have also been numerous initiatives from the private sector and from

international and local NGOs and donor countries. However, these initiatives have been uncoordinated and their effectiveness in developing the software industry limited. Some Palestinian universities set up IT colleges after receiving licenses from the Ministry of Higher Education. According to available data, the supply of human resources in the software and IT industry will increase significantly, particularly when the new IT colleges turn out their first graduates. However, these higher education institutions lack well-defined future development plans or well-qualified academic staff capable of adapting to Palestinian market needs and international, regional, and local developments. Universities lack specialized laboratories and there is no coordination between them and industry to match education with the needs of the software industry. Improved research and development and better coordination are needed between the various Palestinian educational institutions.

Palestinian industry lacks competitive advantage compared with other countries, particularly Egypt, Jordan, and India. The productivity of a dollar spent on labor in Palestine equals 53% of that in India, 90% in Egypt and 192% in Jordan. This is a negative indicator of the low dollar productivity spent on workers in Palestinian areas in comparison with successful neighboring countries. Telecommunication services in Palestinian areas are characterized by high quality but relatively high cost.

The field survey showed that the Palestinian software industry faces a number of obstacles that impede its growth and development and reduce its ability to benefit from the available opportunities in this pioneering sector. Some of these challenges result from the general circumstances facing all industries operating in Palestinian areas, as discussed previously in MAS studies. Other challenges are related to the software industry itself, primarily the weak marketing experience of producers, the small size of local firms, the lack of workforce skills in certain areas, legal problems, plus the general policy of the PNA and its institutions. There are also problems that can be attributed to Israeli policies as well as to production and infrastructure- related obstacles.

Nevertheless, there are still good prospects for this industry in Palestine. The possibility of exploiting the opportunities available depends largely on the ability of Palestinian firms to produce software of an acceptable quality and at competitive prices internationally and locally. There is evidence of a large and growing international market for software. There are also a number of indicators which show that Arab market demand, the most promising for the Palestinian software industry, will increase at a faster pace. In addition to the opportunities available in the local market, there are also opportunities for Palestinian firms to obtain subcontracts with regional and international software companies requiring access to Arabic-speaking markets through the modification of existing international software, as well as the development of Arabic software in different areas.

To benefit from these opportunities, a number of policies and measures need to be implemented to assist the industry and increase its competitive advantage. These policies and measures fall into three groups according to the parties required to implement them, although some measures require cooperation by all the relevant parties.

I. Palestinian software producers

Palestinian software companies should make strenuous efforts to develop their capabilities in the fields of production, quality control, and risk management in order to produce software that is competitive both locally and internationally. Further, there needs to be cooperation in common interests between firms as regards capital, unified arrangements and a collective contribution towards the establishment of research centers keeping track of production techniques and market trends. Companies need to contribute to the funding of research laboratories and research projects at universities. Channels of communication established between industry and educational institutions could convey up-to-date technical, production, and marketing developments, thereby contributing to the design of educational and training programs that meet the needs of industry. Software companies also need to establish close ties with international companies and encourage computer literacy and Internet activities through cultural events. The provision of community institutions with software and equipment, support for computer training and Internet courses, active interaction with the government in IT-related legislation, and greater participation in regional and international trade fairs are all cases in point.

II. Government and public sector institutions

These bodies are expected to play an effective role in developing the IT sector. The role of the government can be divided into four complementary categories: public sector administration, human resource development, private sector development, and information management and organization. In the field of public sector management, there is an urgent need for an IT strategy in Palestinian areas to define goals, the necessary policies and measures to realize these goals, and to translate them into practical plans and programs with a specified role for each party concerned. In addition, the Higher Governmental Technical Committee for Information Technology needs improvement. Temporary preferential treatment should be given to local firms in government tenders while Palestinian commerce abroad should be enhanced and positive relations created with international firms. A national conference bringing together all the relevant bodies could be held to discuss the current situation and prospects for the Palestinian IT industry and to establish a development strategy for the sector. Other issues requiring discussion are shortcomings and imbalances in telecommunications legislation, the pricing of telecommunications services, Internet service supply policy, and running the Palestinian international code number on the Internet: PS top level domain.

Training centers and universities need to focus on the development of marketing courses, modern systems analysis, quality control systems, and management of software projects. Additionally, surveys conducted of the skills available at present would enable an assessment of current and future industry needs in the light of local and international developments in the software industry. This would help in establishing restructured courses at universities and training centers and act as a guide for the licensing of new specializations, modifications, and the development of current fields of study and research. Equally important, standards and certificate accreditation criteria have to be specified. Universities and scientific research centers need support for their activities. Other public institutions, such as schools, need to provide computer and Internet education through curriculum development from an early age and motivate teachers and students to use IT methods.

In the private sector, the PNA can encourage companies to develop and conduct research through financial incentives, including tax holidays. Other means could be for local firms to cooperate with international firms in support of joint research projects and to link research and development activities with the industry through technological incubators, the establishment of specialized industrial estates, and the creation and promotion of capital to provide long-term finance coupled with easy credit terms for producers. Last but not least, the PNA should support the Palestinian office in Dubai Internet City to become a permanent link of communication between producers and international markets.

The PNA can contribute to information management and organization by approving intellectual property protection legislation in line with international laws and the principles of the World Intellectual Property Protection Organization (WIPPO) and trade-related agreements pertinent to intellectual protection rights (TRIPS). They can also publish international standards of software production and introduce and highlight their importance.

III. Supportive institutions, namely Palestinian Information Technology Association (PITA)

There are a number of issues to which the PITA may contribute. It can reinforce and encourage cooperation between software company producers and coordinate production and marketing decisions among them. PITA can also open and enhance channels of contact with various parties involved in the software industry, particularly local universities and the Ministries of Industry, Planning, Economics, Trade, and Telecommunications. Furthermore, it can create databases of production techniques, management, marketing, and technical developments in the software industry.

It is recommended that universities and local training centers concentrate on matching educational output with the needs of software companies. This requires practical training and academic curricula in harmony with the needs of software firms for organizational and production skills, plus coordination with software firms concerning university research activities. Students also need to be encouraged to work part-time in software companies.