Prospects For the Development of The IT Sector in The Gaza Strip

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The Information and Communication Technology (ICT) sector is considered one of the most important Palestinian economic sectors, as any development in this sector will reflect positively on the technological development of all other sectors. There is a large and growing trend among other economic sectors to computerize their operations and take advantage of information technology applications and solutions. The IT sector is a promising and growing sector that attracts skilled labor force. Also, it was one of the sectors least affected in light of the Covid-19 pandemic due to the nature of professions and businesses in it that do not need physical contact between its workers. This sector has flourished because other economic sectors have resorted to searching for technological solutions; accordingly, the demand has increased and flourished for Internet services, e-education, e-commerce, e-marketing, web services, and others.

A historical overview of IT in Palestine

The spread of ICT in Palestine started relatively late compared to developed countries and some third world countries.

Palestinian companies provided ICT in the West Bank and Gaza Strip in the early 80s only through services that focused mostly on retail and some wholesale of computers and electronics, in addition to launching some centers for training in computer literacy. Most of the Palestinian companies had been sub-agents of Israeli dealers and have limited experience with after-sales services and programming (coding). At that time, as a result of the complete Israeli control over the lives of the Palestinians, it was difficult to obtain a landline phone, not to mention the high cost and long time needed to obtain a phone subscription.

Some local and relatively few companies focused in providing software and programming services on accounting-related packages to serve the local market. Because of Israel's complete control over ICT products, the Palestinian ICT market had been severely restricted.

The Oslo Accords in 1993 and the establishment of the Palestinian National Authority marked the beginning of recovery and flourishing of The Palestinian ICT market, where the decrease in direct Israeli control over the private sector led to real growth in this sector in addition to the accelerating growth globally in the global ICT sector, which had a multiplied impact on the Palestinian economy. The growth in the Palestinian ICT sector has been driven by the increasing demand for its products by the Palestinian private sector, universities and the public sector, as well as the establishment of the first Palestinian Internet Service Provider (PALNET). This growth made the Internet accessible to all commercially, and the number of service providers increased in Palestine.

The 1993 Oslo Peace Accords between the Israelis and Palestinians included a set of agreements to support economic development and stability in priority economic sectors. In 2009, the Palestinian Telecommunications Regulatory Authority (PTRA) was created and the Ministry of Communications and Information Technology (MTIT) stepped in as an industry regulator. The Israeli occupation regulated its technological and digital relationship with the Palestinian Authority through an interim agreement in 1995. This agreement granted the Israeli side the right to have complete control over the frequency's spectrum in the Gaza Strip and the West Bank, including the frequencies of telephones, radio, television, and satellite broadcasts, and to determine the digital range of telephone services. This agreement also granted the Israeli side control over international outlets (ports) for telecommunications, imposed on Palestinian companies access to the outside through Israeli companies, and imposed restrictions on the construction of Palestinian networks and relay stations in the Palestinian areas classified (C).

These restrictions have hampered the integration of Palestinian networks, and forced them to communicate with each other by renting spaces from Israeli operators at unreasonable prices and conditions, which hindered communication between the governorates of the same country, especially between the West Bank and the Gaza Strip [1].

The Palestinian ICT sector had begun to demonstrate significant growth by the end of 1995. The biggest end user of technical products and services was Palestinian National Authority institutions, closely followed by local authorities and councils (municipalities) and then larger companies, especially utility companies such as water and electricity companies in the Jerusalem governorate. In 1997, the Palestinian telecommunications sector was 100% privatized with the establishment of the Palestinian Telecommunications Company, which was licensed to be the sole operator of telecommunications in Palestine. The company had installed a digital network linking the West Bank and Gaza Strip and currently offers a wide range of services such as standard fixed telephone lines, leased lines, ISDN and ADSL connections, broadband services and most recent data centers' service.
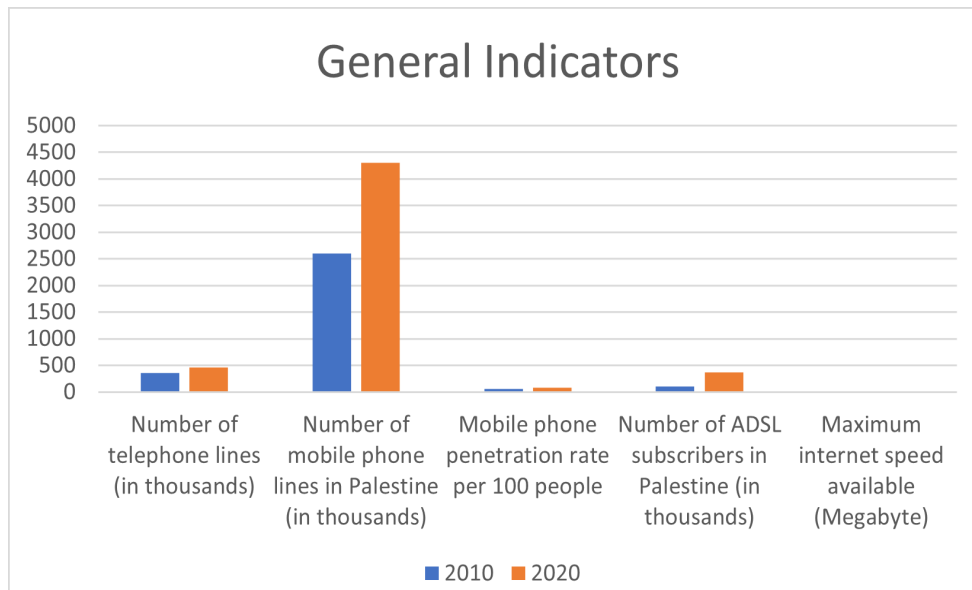
Digital technology is already playing an important role in the West Bank and Gaza Strip. The development of the digital economy is among the national priorities. Access to the internet has increased significantly in recent years, with the percentage of Palestinian households having Internet access at home in 2019 increasing to more than 80% (compared to 52% of households in 2017), while 86% of Palestinian households own smartphones.

The following is an explanation of the steady growth of the IT infrastructure in Palestine between 2010 and 2020 [2]:

#	Indicator	2010	2020
1.	Number of telephone lines (in thousands)	363.00	466.30
2.	Number of mobile phone lines in Palestine (in thousands)	2,600.00	4,300.00
3.	Mobile phone penetration rate per 100 people	64.00	83.00
4.	Number of ADSL subscribers in Palestine (in thousands)	110.00	373.00
5.	Maximum internet speed available (Megabyte)	0.50	13.50

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1 The role of the communications and information technology sector in sustainable development, the Palestinian Territories as a model, a master's thesis by researcher Sidqi "Muhammad Anwar" Abu Duhair, An-Najah University, 2021. Available through the link https://cutt.us/QXznh

2 Palestinian Central Bureau of Statistics' Reports

General Indicators

Chart titled "General Indicators" comparing 2010 and 2020 values for: Number of telephone lines (in thousands), Number of mobile phone lines in Palestine (in thousands), Mobile phone penetration rate per 100 people, Number of ADSL subscribers in Palestine (in thousands), Maximum internet speed available (Megabyte). Y-axis from 0 to 5000. Legend: ■ 2010 ■ 2020.

The period of the Palestinian National Authority can be divided into two parts, a period from 1993/1994 until 2005/2006. The public sector was the dominant sector in the ICT market due to the building of institutions, governmental bodies, ministries, municipalities, and large companies. The imported technology was the latest at the regional level.

As for the next period, it is after 2007 and the start of the siege on the Gaza Strip, where the private sector worked hard to push and attract technology from abroad to the inside with the efforts of the private sector itself, in order to push the local growth process in this field. Importing technology from abroad often, on top of which is the introduction of modern servers and network equipment into the Gaza Strip.

After 2007, the establishment of technology incubators and business incubators was also very active as one of the ways to create job opportunities that help reduce unemployment rates. The number of universities offering majors in the field of IT has also increased, which has increased the demand for studying this field. Unfortunately, most of these disciplines are duplicated between universities, and the quantitative production of graduates has increased at the expense of quality. The private sector has seen this through the quality of graduates and the absorption of up to 5% of graduates in the local private sector.

Since 2012, the leap of remote work and freelancing has started. This has been helped by the limited ability of the local market to absorb graduates, in addition to restrictions on movement and travel for graduates. Graduates and the private sector have tended to implement tasks and projects without the need to travel abroad in light of the availability of the Internet in Palestine and the Gaza Strip.

The phenomenon of remote work has resulted in many challenges, including the limited and weak skills of graduates compared to the needs of foreign markets, poor infrastructure and the lack of fast internet on mobiles (4G, 5G). Consequently, this affected the ability to respond to external customer requests due to the difference in infrastructure between Palestine and the region.

The economic role of the ICT sector:

The Palestinian ICT sector contributes about $493 million in the annual added value of the economy and represents approximately 3.2% of the GDP; It can be called the digital economy. Employment in the ICT industry nearly doubled between 2008 and 2018, while exports of ICT services increased from less than $2 million in 2000 to more than $85 million in 2017. The development of the digital economy is among the priorities of the National Development Plan (2021-2023), the strategy of the modern ICT sector (2021-2023), and many sectoral strategies [3].

Among the internal and external factors affecting the slowdown in the development of the digital economy:

1. The restrictions imposed by the Israeli side on the ICT sector by procrastinating in granting wireless communications frequencies to the third generation "3G" in the Gaza Strip and the 4G and 5G in Palestine, and preventing and delaying the entry of necessary communications equipment, in addition to restrictions on movement of individuals and goods between the two parts of the homeland.

2. Weakness and shortcomings in the regulatory frameworks for the ICT sector, including laws governing cyber security, protection of personal data, regulations for the registration of digital businesses and intellectual property, and the political division and the subsequent laws and regulations governing the two parts of the same homeland.

3. Influential economic and social factors such as the high level of poverty and unemployment, the low average income of the Palestinian citizen, and the severe disparity in income between the two parts of the homeland.

The COVID-19 pandemic has increased the use of technology in many areas. But it has also exacerbated pre-existing inequalities in access to digital opportunities as public sector employees and many businesses have switched to working from home during the lockdown. The percentage of companies using technology increased by 12% during the pandemic period (primarily for marketing, business management and sales).

Schools and universities have introduced online education, but uptake was uneven due to insufficient access to computers and the Internet. It was found that only 35% of families have computers or tablets, while 80% have an Internet connection.

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3 Palestinian Digital Economy Assessment Report, World Bank 2021. Available at the link: https://documents1.worldbank.org/curated/en/472671640152521943/pdf/Palestinian-Digital-Economy-Assessment.pdf

As a result, 51 Only % of families with children aged 6-18 who were part of the pre-pandemic education system in remote activities in March and May 2020. The Ministry of Education had to adopt a team system that divides students into small groups to receive face-to-face instruction at school at least three times a week and at the same time the pandemic encouraged the development of digital content in Palestinian higher education institutions, with 57% of higher education institutions digitizing materials for almost all of their academic curricula, compared to just 5% before the COVID-19 pandemic.

The Gaza Strip, the blockade, and keeping pace with IT:

In the case of the blockaded Gaza Strip, the IT sector is considered a cross-border sector. The number of remote workers has increased dramatically, and the outsourcing system and the freelancing system have spread as services provided to customers in other countries such as Saudi Arabia, UAE, Kuwait, Qatar, Turkey, and some EU countries, in addition to Canada and USA. This, in turn, led to an increase in the demand for freelance spaces, which provide a place to work with uninterrupted electricity and high-speed internet for a fee.

Because of the blockade, this sector suffers from the difficulty of introducing devices, communication equipment and networks, bearing in mind that the telecommunications sector in Gaza is still working on the outdated (2G) technology, while the occupation has allowed in the West Bank to use the (3G) technology since 2018. On 31/8/2021, the occupation announced that it would allow the use of the (4G) technology in the West Bank, and Gaza is still working on the (2G) technology, while the Israeli companies are working on the (5G) technology.

Palestine ranked 123 out of 174 globally and 14 out of 19 regionally on the International Telecommunication Union's ICT Development Index for 2017, with a significant difference from Lebanon (64th) and Jordan (70th). According to the Palestinian Central Bureau of Statistics, the Palestinian ICT sector in 2018 included 677 registered companies, employing 8,815 employees, i.e. less than 1% of the labor force and 4% of the GDP.

Opportunities for developing IT for current and future generations in light of the steady population growth:

The IT sector is one of the most important sectors that developing countries are interested in. They seek through it to improve the economic situation of their people, such as the Indian economy's dependence on exporting the services of its programmers, and the Philippines' reliance on exporting call center services, and other countries of the world.

Many of these countries have provided services that can be dispensed with by the companies of developed countries "importing services". Initially, this was through the temptation of low cost, then the temptation of speed and the ability of these companies to adapt to the project scaling.

The sector of exporting IT and other IT-dependent services mainly depends on having a sufficient number of qualified people to carry out these services. So, the journey of preparing competencies began in India, starting with schools and universities, which produced a huge number of qualified programmers to work for the global market. Then the governments of service-exporting countries and major companies contacted developed countries to offer new services at attractive costs, which led to the dependence of major global IT companies on Indian programmers. Currently, this sector produces 8% of India's national product of $2.6 trillion, equivalent to $208 billion.

According to the World Bank's 2020 statistics on advanced technology statistics, Palestine's exports of advanced technology are estimated at $12 million annually, while Jordan's exports are estimated at $78.7 million, Lebanon's $76.2 million, while Singapore's are estimated at $160.5 billion, while China's exports are worth $758 billion[4].

China occupies the list of advanced technology exporters, followed by Germany, South Korea, Singapore and the USA, and Israel exports $13 billion, while the United Arab Emirates is the first in the Arab world in this field. According to data issued by the World Bank for the year 2020, high-tech exports include products with high efficiency in terms of development and research, such as aerospace, computers, pharmaceutical products, scientific instruments, and electrical devices.

The process of exporting services is not limited to programming and programmers' services, but rather includes service providers of graphics, animation, dubbing, text translation and languages, engineering and administrative works, and even face-to-face education services, e-learning, simultaneous translation, and memorizing the Holy Qur'an, and the list goes on and on. All of this because of the availability of technological infrastructure to provide these services.

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4 https://data.albankaldawli.org/indicator/TX.VAL.TECH.CD

Education and ICT:

About 90,000 students study at the secondary level annually, with a success rate of about 80%[5]. The number of university students, according to The Palestinian Central Bureau of Statistics for the year 2020/2021, reached about 215,000 students, **distributed according to the specializations mentioned below:**

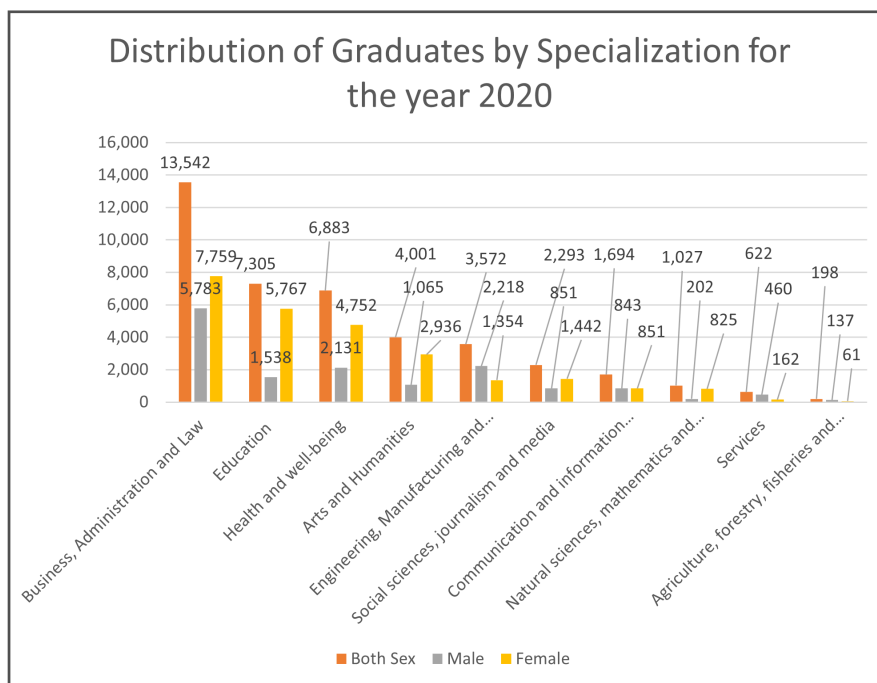| #	Specialty / Major	%	Both	Male	Female
			Sex		
1.	Business, Administration and Law	26.70%	57,337	26,267	31,070
2.	Health and well-being	21.27%	45,675	14,325	31,350
3.	Education	13.49%	28,971	6,049	22,922
4.	Arts and Humanities	10.16%	21,828	5,098	16,730
5.	Engineering, Manufacturing and Construction	9.86%	21,169	13,042	8,127
6.	Communication and information Technology	7.81%	16,766	9,358	7,408
7.	Social sciences, journalism and media	5.00%	10,739	3,215	7,524
8.	Natural sciences, mathematics and statistics	3.29%	7,063	1,826	5,237
9.	Services	0.88%	1,889	1,217	672
10.	Other specialties	0.82%	1,770	826	944
11.	Agriculture, forestry, fisheries and veterinary	0.73%	1,558	956	602
	Total	100.00%	214,765	82,179	132,586

5 https://www.pcbs.gov.ps/Portals/_Rainbow/Documents/Success_Percentages_General%20certificate2016-2020_ar.html

Distribution of Undergraduate Students to Academic Majors
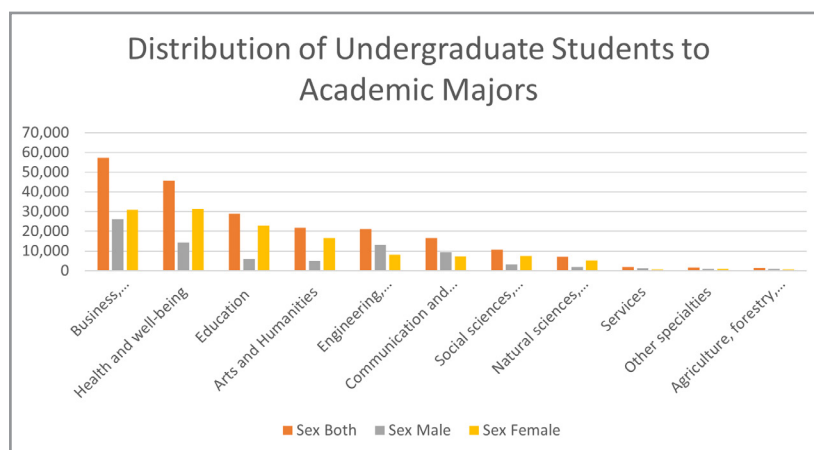
While the annual number of graduates, according to the Palestinian Center for Statistics (2020/2021), according to the disciplines is as follows[6]:

#	Specialty / Major	%	Sex		
			Both	**Male**	**Female**
1.	Business, Administration and Law	32.92%	13,542	5,783	7,759
2.	Education	17.76%	7,305	1,538	5,767
3.	Health and well-being	16.73%	6,883	2,131	4,752
4.	Arts and Humanities	9.73%	4,001	1,065	2,936
5.	Engineering, Manufacturing and Construction	8.68%	3,572	2,218	1,354
6.	Social sciences, journalism and media	5.57%	2,293	851	1,442
7.	Communication and information technology	4.12%	1,694	843	851
8.	Natural sciences, mathematics and statistics	2.50%	1,027	202	825
9.	Services	1.51%	622	460	162
10.	Agriculture, forestry, fisheries and veterinary	0.48%	198	137	61
	Sum	100.00%	41,137	15,228	25,909

Distribution of Graduates by Specialization for the year 2020

It is clear from the above table of graduates that (4.12%) of graduates are from ICT majors. The percentage of graduates is in education majors (17.76%), arts and humanities (9.73%), social sciences, journalism and media (5.57%), business majors and administration and law (32.92%), natural sciences, mathematics and statistics (2.50%), engineering, manufacturing and construction (8.68%), agriculture, forestry, fisheries and veterinary disciplines (0.48%), health and welfare (16.73%), and finally services (1.51%). It is clear from the above mentioned that the density of graduates is limited to literary majors, where the percentage is (65.98%) of the total graduates, and this surplus suffers greatly in obtaining jobs and employment opportunities.

When assessing the needs of the local market for graduates of ICT majors, the annual need is approximately 500 jobs, while the number of annual graduates exceeds 1,600 meaning there is an excess of the local market need, which can be directed to the foreign market if the quality of education and competencies intersect with what the external market needs.
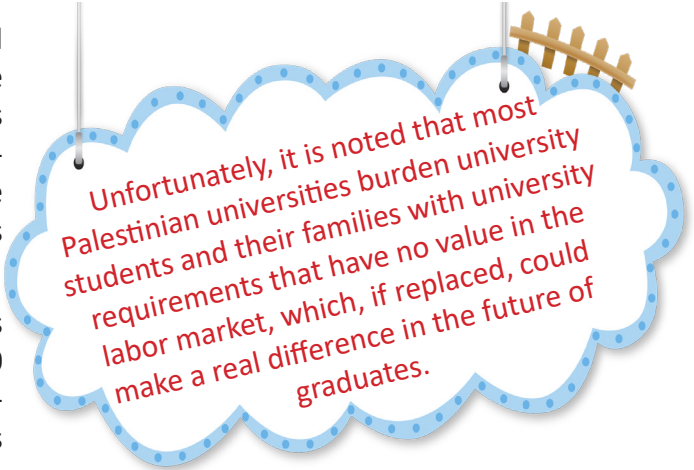
The education system's response to market needs:

The response of the educational system to the requirements of the local and external market is very slow and extends over years to achieve the required change and evolution. This is reflected in the accumulation of graduates who are not qualified to work in the private sector locally and internationally; Consequently, unemployment and poverty rates rise. The university educational sector sees that its role is limited to providing the basics only, and that the private sector is the one who plays the role of qualification for the labor market. Unfortunately, this brings us to a dilemma that has no solution, as the private sector seeks to hire qualified people only and mainly and has no desire to invest effort, time, or even money in developing an unqualified graduate. The cost of preparing a qualified cadre is usually between 3 to 9 months, in addition to the financial cost of preparing the cadre for work, as the financial cost of this practical qualification is estimated at about $3,500 as a minimum.

It is worth noting that most universities that offer educational specializations in the field of information and communication technology, unfortunately, offer the same specializations and repeat them without access to quality and higher feasibility specializations needed by the local and international private sector.

A World Bank report "Technology for Youth and Jobs (2020)" indicated that the reason for the high unemployment rate among ICT graduates is the skill gap arising from the absence of a link between universities and the private sector and the lack of necessities for scientific research such as laboratories and equipment.

According to the same report, (11) universities pump into the Palestinian market about 3,000 graduates in engineering and information technology fields annually. However, recent graduates - especially females - suffer from unemployment due to the skills gap, which makes it difficult for them to join the job market. In 2018, the unemployment rate among computer science graduates was 43% among males and 75% among females. As for engineering graduates, the rate was 39% among males and 69% among females. The skill gap includes specialized technical skills, hands-

Unfortunately, it is noted that most Palestinian universities burden university students and their families with university requirements that have no value in the labor market, which, if replaced, could make a real difference in the future of graduates.

on training, soft skills and creative thinking, **which in turn is caused by two factors:**

1. Limited communication between universities and professional reality, as communication helps universities keep pace with global trends and adapt their curricula.

Difficulty in accessing scientific research supplies including laboratories and equipment, whether within companies or universities, which enables graduates to possess the skills required to work with global clients [7].

Here, we do not want to blame the issue of the low level of the educational sector for the educational system alone. There is a responsibility that lies with the student, the government, and the societal culture.
On the other hand, most of the jobs that are advertised in Palestine by "outsourcing" companies that work for the global or regional technology sector, one of the most important conditions for applying for a job is the applicant's

> It is very important that schools, universities and private institutions provide special courses in communication skills and "soft skills", such as foreign languages, scientific research, logical thinking, writing, managing and presenting projects and other skills that help our students in creativity, communication, logical thinking and avoiding cheating, repetition, copying and pasting and wasting the time.

practical experience related to that job. Here we must stop the debate between academics and the private sector. The customer here is not only asking for the basics, but also for more than that; the student must have worked in the required field. The market does not wait for graduates with basics, but rather they must be specialized, not to mention the great lack of basic communication skills, communication and identification among these graduates.

From the above, there are two very important points that should be noted:

1. Private sector companies invest and accept graduates or employees who do not master the required disciplines, where they train them. However, when the employee begins to graduate and gain good experience, a stronger organization comes and lures them to work for it, which leads to keeping emerging, small and medium companies in constant financial and technical weakness which does not allow those companies to expand or even continue. Companies working in the field of information technology have sensed this by attracting international institutions working in the sector to employees of private companies with high salaries to cover their job needs, which has entered private companies into a dark tunnel due to the graduates' lack of internationally required skills, thus limiting the ability of private companies to develop and grow.

2.   Whoever looks at the previous point believes that large companies are the benefiting of the continuation of this situation. Yes, they benefit, but this benefit is useless, as the number of those who go through this experience is not enough to cover the projects required in the market; Therefore, these companies resort to internal training, which raises costs on the one hand, and on the other hand, it opens the way for other companies to re-attract these employees.

It is necessary to cooperate with the private sector in terms of training and development, by relying on annual questionnaires aimed at searching for market requirements locally and globally to develop a plan aimed at opening new courses that graduate students with specializations that are really needed. At the beginning of the second millennium, the science of "information security" developed after the Internet entered most countries and institutions, and some universities started late to offer new courses and specializations in some pressing topics such as: (Big Data, Blockchain, clouding, data science)

The role of business and technology incubators in creating job opportunities:

Entrepreneurship is considered one of the important fields in the economies of advanced industrial countries, and one of the most promising fields in developing countries. Entrepreneurial projects actively contribute to the development of comprehensive economic development, and are considered the nucleus of building small, medium and large organizations. The entrepreneurial project provides sufficient income for the entrepreneur and his family, in addition to his role in creating new jobs, reducing the unemployment rate in society, as well as the emergence of new types of goods and services that contribute to the opening and growth of new markets that help reduce the gap between the economies of countries[8].

The Palestinian experience in business incubators is still recent compared to some business and technology incubator projects in Arab countries such as Egypt, Tunisia, Bahrain and Saudi Arabia. Most of the incubators in the Arab world, including Palestinian incubators, were established mostly to achieve specific and similar goals represented in contributing to the revival and development of the local economy, promoting technology transfer, encouraging the creation of small and new businesses for young entrepreneurs, and contributing to reducing unemployment rates by creating new job opportunities for the unemployed youth and university graduates.

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8   Fayez Al-Najjar and Abdul-Sattar Al-Ali, Entrepreneurship and Small Business Management, 2nd Edition, Dar Al-Hamid for Publishing and Distribution, Amman, 2010

The Palestinian incubators experience was launched in 2004. During this period, it contributed to the establishment of 28 small companies, and provided financial support, technical and administrative services to more than 87 incubated projects. All known Palestinian business incubators were established with funding from the World Bank or the EU; whether through the (Info Dev) program, or through the Quality Fund and Development Fund (QIF) program in higher education, funding for the majority of incubator activities has been limited to local and international institutions such as (Microsoft), (Intel Google), (USAID PALTRADE), (SPARK) and others[9]

Many institutions play an important role in providing an ecosystem for leadership and incubation, including the private sector, the government represented by the Ministry of Communication and Information Technology, the Ministry of National Economy, the Ministry of Education and Higher Education, the Scientific Research Council, some supportive educational and international institutions, and incubators in the Gaza Strip such as the University incubator Islamic (BTI), Gaza Sky Geeks (2011), PICTI (2004), etc.

The sources and volume of funding for Palestinian incubators are very limited compared to other sectors such as relief and employment programs funded by international institutions, while the government's contribution to funding incubation programs is almost non-existent.

Most incubators suffer from the seasonality of funding and their heavy dependence on external funding, which fluctuates from time to time, which negatively affects incubators' activities and incubation of projects and ideas. Unfortunately, most of the incubators do not properly perform the role assigned to them, and work in their methodology in the same manner as NGOs and civil society institutions in the search for funding.

Causes of the weakness of technological and entrepreneurial education[10]:

The weakness of technological and entrepreneurial education, in the Palestinian case, is not limited to lack to natural and economic resources, but rather expands further to the presence of many obstacles placed by the occupation, or the agreements signed with it, in front of developing the economy, consolidating development that rises in the economy and prosperity, and government obstacles, and in the private sector itself.

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9   Basma Barhoum, The Role of Business and Technology Incubators in Resolving the Problem of Unemployment for Entrepreneurs in the Gaza Strip, (Master's Thesis), The Islamic University, Gaza, 2014.

10   Towards policies for developing technological and entrepreneurial education, a research paper issued by the Palestinian Center for Policy Research and Strategic Studies - Masarat, 2018. Available at the link https://cutt.us/E9zF8

First: the shortcoming of the government sector:

There are shortcomings in the government sector to develop technological education in Palestine, and this is represented in:

- Weak infrastructure for technological education and weak technical capabilities, as the content of technological education is still behind what many countries have achieved in this field. In the technology school curriculum, for example, the matter is still limited to theoretical aspects; The student is required to memorize more than to apply within practical projects. Failure to link the university education system with the needs of the labor market, especially the private sector, reduces the flow of pioneering and innovative ideas, which reduces the chances of incubation.

- The absence of public sector ownership of business and technology incubators, and the limited government budget directed towards incubation, as this sector is still funded by donors.

- After incubation, most companies suffer from government legal restrictions, bank restrictions, and bank transfer problems.

- Limited participation of the government sector or its representatives in the administrative or advisory boards of technology business incubators.

Second: the low contribution of the private sector:

The private sector suffers from a poor transition from the mode of consumption of technology to the mode of production of it. Although there are initiatives and efforts in this aspect, especially in terms of business and entrepreneurship incubators, they are limited, due to the limited participation of the private sector or its representatives in the administrative or advisory boards of incubators, and the poor funding and networking.

Third. Obstacles to the Israeli occupation:

The Israeli occupation constitutes one of the most important obstacles facing the entrepreneurship, technology and marketing sector, in terms of geographical and political obstacles, as the economic dominance associated with the conditions of the occupation and the economic agreements signed with it, and its control over the crossings and borders, which causes the weakness of the local market, as this reality impedes the manufacture of (hardware) due to import and export obstacles and the narrowness of the local market. This also deters private investors due to the unsafe investment environment. However, these fears become unjustified when referring to the software sector, as this sector does not need large facilities and is not economically costly, but it is possible to work (as a start) from home, or small offices.

As a result of these obstacles, technological education is in decline and does not contribute as required to supporting the Palestinian economy, which is, originally, a small and weak economy in its structure, dependent on external influences, as it exists as a consumer market for Israeli products, and a source of cheap labor in general, apart from the subsequent economic problems that occurred as a result of the occupation policies and the division (Disunity).

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IT markets:

There are many and varied ICT markets to include, but are not limited to, the following:

1. The ICT devices market, which is the market for all electronic devices related to the sector, including servers, office devices, and big data stores.

2. The software market, where the software market is undergoing a significant change, driven by factors including Internet Protocol, IP networks, open systems, Software as a Service (SaaS) models and the increasing demand for business/adaptation of ICT, where ICT is targeted as a supporter of business improvement.

3. Information technology services, which are the support services for the sector, such as maintenance services, application and program support, technical support and hosting service.

4. Outsourcing services, which is the service provided by a third party, such as programming and project implementation services, technical support and sales through call centers, and other services.

5. Telecommunication services It is the structure of telecommunications networks of any kind, whether terrestrial or wireless, which enables communication and the operation of the Internet and private networks.

6. Mobile services, which is the revolution of wireless communications and high speeds, which allowed Internet access, video calling services and data transmission at very high speeds. The 3G networks (2 Mbit /s), the 4G (up to 40 Mbit /s) and the 5G (above 1 Gbit / s) are spread globally. Great countries such as the USA and China are moving to establish 6G networks (1 terabyte per second), and the speeds of the 4G, 5G and 6G are working to enable the so-called Internet of Things (IoT).

Current and future employment prospects in the ICT sector:

The IT sector in Gaza has witnessed a great change during the past years, due to the significant increase in remote employment rates, after the Covid-19 epidemic. In a report issued by the United Nations Relief and Works Agency for Refugees "UNRWA" on recruitment needs and filling vacancies in international jobs in the IT sector, which was issued in mid-2021, the need for expertise has been clarified, which intersects widely with other sectors, especially the private sector, **in the following professional fields:**

1. Software Engineering with the following job titles:

- Microsoft development technologies Expert
- Java-based and Internet platforms Expert
- Software Engineer – (PHP/Laravel) developer
- Full Stack Developer – MEAN
- Software Engineer - Frontend
- Software Architect
- Software Engineer - Mobile Backend
- Software Engineer - Mobile Applications
- Software Architect - Mobile
- System Analyst
- Technical PM / Scrum Master
- Software Tester/ QA
- Identity and Access Management Specialist
- Content Management Solutions (CMS) specialists
- Microservice specialists
- Hybrid mobile technologies Expert

2. User Interface / Experience-Based Design

- Web UI/UX Designer
- Mobile UI/UX Designer
- Graphic Designers
- Game Development, Animation, and Motion Graphics

3. Cloud systems development/computer architecture

- MS Certified Solutions Expert: Cloud Platform
- DevOps Engineer
- Cybersecurity DevSecOps Consultant

4. Business Intelligence and Geospatial

- Business intelligence and visualization specialist
- Business intelligence Administrator
- Data Scientist Expert
- Microsoft BI and Reporting Support Specialist
- Artificial Intelligence Specialist
- Machine learning Specialist
- IOT Specialist

5. MS SQL database management and development

- Database Specialist
- Data ETL Specialist
- NoSQL Document DB Developer

6. SharePoint

- MS Productivity Solutions Expert: Developer
- MS Productivity Solutions Expert: Administrator

7. Business Analysis

- Business Functions Analyst

8. Project Management

- Project Manager/Agile Project Leader

9. Networks

- Computer network management

10. Cyber Security

- Cybersecurity DevSecOps Consultant
- nformation Security Specialist

11. IT Infrastructure

- Infrastructure Automation Expert
- Enterprise Monitoring Administrator
- Cloud Administrator AWS GCP
- Virtualization Administrator
- Platform Administrator
- Web Windows Administrator

12. Support

- Technical support specialist

13. Communications

- Communications Consultant
- Service Desk for Conferences Agent
- Remote Event Coordinator

Conclusion:

The ICT sector is the most promising sector locally and globally to attract and employ tens of thousands of graduates in Palestine and the Gaza Strip in particular. With the existence of incubating environments

directed to stimulate the acquisition of the necessary expertise and skills, it is expected to contribute to reducing unemployment rates, increasing the level of income and decreasing the level of poverty in the event that everyone, led by the private sector and the civil sector, joins forces to achieve this.

Recommendations and proposed solutions:

There are many recommendations and proposed solutions to include a number of alternatives that the civil sector can be a real player in achieving as follows:

The first alternative: developing educational policies and community awareness for the technology entrepreneurial sector

This is done through:

- The civil institution raises community awareness of the importance of technology and safe and sound use, in addition to being one of the main gateways to job opportunities, reducing unemployment and positively impacting poverty reduction.

- Raising awareness of the importance of linking majors to the labor market, and increasing pioneering technological disciplines, which expands opportunities for young people to participate more broadly.

- Developing educational curricula with regard to practical training in technology and software disciplines.

- Developing scientific research policies and software experimentation, through advanced computer laboratories, to contribute to researchers and IT students receiving advanced practical training, in addition to providing a research environment that keeps pace with the development in this field.

- Work on developing the infrastructure of the information economy, which is represented in the advanced and secure communication networks on which economic activities are based, as a means to achieve expanding the contribution of technology in the various service and industrial sectors.

- Working to spread awareness among the community and students who are going to university, in particular, about the importance and feasibility of studying informatics majors, the importance of technological training and entrepreneurial businesses and their feasible economic returns, and the job opportunities they create.

- Organizing and reviewing the legislative and legal environment that serves the technology sector environment.

- Spreading the culture of entrepreneurship through the media within intensive media campaigns, and focusing on the Technology Entrepreneurship Week.

- Working on developing specialized training in the field of information technology and focusing on quality, not quantity, in graduates.

This alternative is in line with the modern trends that the developed countries of the world seek to achieve through their educational institutions, civil, community and international institutions, by promoting the adoption of measures and policies that take into account modernity and technical support, the use of ICT tools, the importance of employing technology tools, and their impact on the economic and social sectors.

This alternative is in line with the efforts of the Palestinian Ministry of Education and the Ministry of Labor to support the technology sector, develop new methods and curricula. It is highly acceptable to the private sector. Also, it is an alternative with high flexibility in terms of implementation and the benefit for youth. This alternative also carries high efficiency and effectiveness in terms of linking majors to the labor market, especially technology, which helps open the way for thousands of graduates to obtain job opportunities or self-employment in private projects.

The second alternative: Contribute to stimulating the private sector and business incubators to support the technology sector:

This alternative is based on private sector support for technological production of software, applications and services, through:

- Raising awareness of interest in the business sector, and working on the use of technology in commercial transactions.

- The necessity of expanding the provision of services by business incubators for the incubated projects.

- Coordination between the work of the incubator and the private sector so that the incubator is a partner in the development process and not a competitor.

- Work on mobilizing and advocating for allocating government support for business incubators, and facilitating lending and financing programs for new projects.

- Working now on the digital transformation of the civil work sector, which will open new horizons to absorb competencies and the real transition of civil work from traditional activity to a new level in providing services to beneficiaries.

The IT job market and the skills needed to succeed as an IT professional change faster than any other field of work. An IT skills gap occurs when the workforce demand for a particular IT job role that exceeds the supply of qualified professionals. Working in this renewable field needs to allocate the necessary development funds in both private and public sector companies, in addition to the urgent need to qualify trained and practice cadres on a semi-annual basis to follow up on developments and evolutions in this field. The adoption of this strategy will greatly allow the provision of ready and qualified cadres who are also always responsive to the local, regional and international market.

Unfortunately, most private and public sector companies do not allocate annual budgets for the necessary development, while most of the effort in this regard falls on the workers themselves.

Annexes:

Annexe (1):

UNRWA ITSC Digital Competencies

UNRWA IT Service Centre Digital Competencies

#	Expertise Domain Role Title	Core technical requirements (not limited to)
A	**Expertise Domain: Software Engineering & Development**	
A01	**Microsoft development technologies Expert**	Windows Server, Microsoft .NET (C#), Entity Framework, DevExpress, MVC, Internet Information Services, Webservices (REST/SOAP), XML/JSON, MS SQL Server (Relational modeling and Query writing/optimization), Active Directory, Oauth, SAML, Code Management (Team Foundation Server, Git, Subversion), Jira, Build & Deployment Management (MS Azure DevOps)
A02	**Java-based and Internet platforms Expert**	Java and J2EE, Spring framework, Java Server Faces (JSF), knowledge of SQL and NOSQL databases, Knowledge of SOAP and RESTful Web Services development, ActiveMQ , WebSphere.
A03	**Software Engineer – (PHP/Laravel) developer**	PHP, frameworks (Laravel), developing and consuming RESTful services, JS frameworks (Angular, Ionic), HTML, CSS, JavaScript, Material Design and responsive design, Docker containers, CI/CD pipelines implementation, AWS and Azure Cloud Services.
A04	**Full Stack Developer – MEAN**	Node.js, Express JS application framework, Angular framework, HTML, CSS and responsive design, MongoDB database development, MEAN (MongoDB, Express JS, Angular and Node JS) applications development, GIT , NoSQL Document type databases (MongoDB, CouchDB, Couchbase), Code Management (Subversion, Git), Build & Deployment Management (MS Azure DevOps)

#	Expertise Domain Role Title	Core technical requirements (not limited to)
A05	**Software Engineer - Frontend**	HTML5, Bootstrap, CSS (SASS), Jquery, AngularJS 1.5+, 2.0, Express.JS, Webservices (XML/JSON), Telerik KendoUI, Code Management (Team Foundation Server, Git, Subversion), Jira, Build & Deployment Management (Jenkins / Octopus etc.), D3.js
A06	**Software Architect**	Backend + Frontend domain experience (A01-A03 and A05), former Senior Developer. Strong system design skills (e.g., scalability, security, standards), Continuous Integration, MVC, Microservices, REST, SOA, Enterprise Data/App Integration (ESB), GLB, DR, CDN, AWS, Azure.
A07	**Software Engineer - Mobile Backend**	Mobile Backend-as-a-Service (BAAS) frameworks (e.g. Usergrid) and/or MEAN-stack or .NET Webservices on SQL back-end for custom mobile application backend development, Code Management (Subversion, Git), Build & Deployment Management (MS Azure DevOps)
A08	**Software Engineer - Mobile Applications**	Kotlin & Swift (IOS/Android) and HTML5 Hybrid applications (e.g. PhoneGAP, Ionic, Titanium, Onsen, ReactNative), Couchbase Lite, SQLite, API's, Synchronization Services, Code Management (Subversion, Git), Build & Deployment Management (MS Azure DevOps)
A09	**Software Architect - Mobile**	Backend + Frontend domain experience (A06/A07), former Senior Developer. Strong system design skills (e.g. scalability, security, standards), Continuous Integration
A10	**System Analyst**	Strong technology affiliation, able to produce technical requirement documentation, system design diagrams, integrate front-end/back-end/external systems and advice on industry standard implementation, configurations, integrations, security, performance, etc.
A11	**Technical PM / Scrum Master**	Broad technology affiliation and experience in skillsets mentioned under A01/A02/A05/A06/A07. Create and maintain WBS and/or Product Backlog. Create and maintain Project Plan and/or Sprint Planning. Manages team of analysts, engineers and testers, reports weekly progress and manages escalations.
A12	**Software Tester/ QA**	Review solution against requirements, write integration test-scripts, write test-plans, estimate test-cycle times and resources needs, execute test-plans and register results in test-log. Prioritize bugs and drive resolutions with software engineers. Support preparation of UAT and supports end-users in UAT test-cycles.

#	Expertise Domain Role Title	Core technical requirements (not limited to)
A13	**Identity and Access Management Specialist**	Design, build, implementation, and delivery of scalable identity solutions, implementing information security standards & methodologies on multiple identity solutions uniformly, RBAC, SAML, AD, LDAP, account lifecycle management, user provisioning and self-service; account creation and management; entitlement review and certification; entitlement management; enterprise directory architecture and design; role-based access control; single sign-on; identity federation; privileged user access management; multifactor authentication.
A14	**Content Management Solutions (CMS) specialists**	Design, build, implementation, and delivery of CMS platforms (WordPress, Drupal), custom plugins, custom themes, APIs, SEO experience.
A15	**Microservice specialists**	Strong understanding of microservice architecture. Experience supporting and/or implementing complex integration projects, with knowledge of RESTful API services, Spring, Spring Boot, REST, JSON, Micro Services MongoDB, Apache Kafka, and Kubernetes, Worked in Agile framework.
A16	**Hybrid mobile technologies Expert**	Experience developing hybrid mobile applications, with Ionic, Angular, CSS, HTML 5, JavaScript and other broadly used Web development technologies, Delivered hybrid mobile applications that work on both Android and IOS using these technologies, Experience with node.js, Karma, Jasmine, Protractor, Extensive knowledge of mobile APIs and UI standard, web client-side experience – JavaScript, MVVM/MVC Framework (Angular, Knockout, etc.).
B	**Expertise Domain: User Interface/Experience Design**	
B01	**Web UI/UX Designer**	Adobe XD, Adobe Photoshop / Illustrator, Sketch, Prototyping for Web Applications, Portals, Websites. Ideally includes skillsets of A02
B02	**Mobile UI/UX Designer**	Adobe Photoshop / Illustrator, Sketch, Prototyping for IOS/Android Phone/Tablet. Ideally includes skillsets of A07

#	Expertise Domain Role Title	Core technical requirements (not limited to)
B03	**Graphic Designers**	Strong knowledge of graphic designing, Familiarity with design software and technologies (such as InDesign, Illustrator, Dreamweaver, Photoshop), Conceptualize visuals based on requirements, Develop illustrations, logos and other designs using software or by hand.
B04	**Game Development, Animation, and Motion Graphics**	Motion Designer, Video Compositing, 2D/3D Animation, Video Editing / Integration, 3D modelling, Immersive technologies, Coding for games. Experience in using tools such as Adobe After Effects , Maxon Cinema 4D Studio, Adobe Photoshop, Adobe Illustrator, Adobe Premiere Pro, Trapcode Suite, Video Copilot Element 3D.
C	**Expertise Domain: Cloud Development / Architecture**	
C01	**MS Certified Solutions Expert: Cloud Platform**	Microsoft certified architect in designing/implementing Azure cloud solutions with a focus on the following combination or part of Azure services: App Services, SQL Databases, Storage, Cloud Services, Service Fabric, Multi-factor authentication, data factory, service bus, event hubs, application gateway, web apps, mobile apps, API apps, API's, Container Service, DevOps
C02	**DevOps Engineer**	developing the automation scripts for the creation of projects using Atlassian tools and Azure DevOps, pipeline creation for CI & CD in Bitbucket, Bamboo, and Azure DevOps, scripts to create Containers and deploy the applications to the containers, Integrates the components (Application/Test script Build & deploy) to the pipeline, experience in languages: Application performance monitoring tools like New Relic, Docker, Kubernetes, CI/CD tools, like Bitbucket, Bamboo, Azure DevOps , API manager.
C03	**Cybersecurity DevSecOps Consultant**	Solve security problems, Identify and promote security champions inside developers' team, Integrate security into the CI/CD pipelines and on all other SDLC phases, background in deploying secure solution, background in deploying secure solution. API Security, AWS Cloud Security and Azure DevOps. Certificate Management, Encryption, Penetration Testing, Vulnerability Scanning, Security and Monitoring tool. DevSecOps security controls and best practices.

#	Expertise Domain Role Title	Core technical requirements (not limited to)
D		**Expertise Domain: Business Intelligence & Geospatial**
D01	**Business intelligence and visualization specialist**	Requirement analysis, fact/dimension modeling, report and dashboard development, statistical analysis desirable. Skilled in designing interactive and captivating reports and dashboards
D02	**Business intelligence Administrator**	Requirement analysis, fact/dimension modeling, server administration, server operations (on-prem / on cloud), troubleshooting and support experience. Statistical Analysis is desirable
D03	**Data Scientist Expert**	Provide Extraction, Transformation, and Load (ETL) experience coupled with enterprise search capabilities to solve Big Data challenges. o Design and implement high-volume data ingestion and streaming pipelines using Open Source frameworks like Apache Spark, Flink, Nifi, and Kafka on AWS Cloud. Monitor and troubleshoot performance issues on the enterprise data pipelines and the data lake. D3js, Plotly,leafletjs, mapboxjs, knowledge of R or Python programming languages, Tableau and PowerBI, advanced DB knowledge, complex queries from different data sources (including SQL and NoSql databases).
D04	**Microsoft BI and Reporting Support Specialist**	Design and development of new Power BI reports and dashboards, Analyze requirements and develop visualizations and reporting solutions. Determine the optimal way to develop the solution to ensure reports are rendering efficiently, Develop and publish reports with the correct format for deployment across all environments,
D05	**Artificial Intelligence Specialist**	Responsible for developing, programming and training the complex networks of algorithms that make up AI so that they can function like a human brain. This role requires combined expertise in software development, programming, data science and data engineering.

#	Expertise Domain Role Title	Core technical requirements (not limited to)
D06	Machine learning Specialist	Design machine learning systems. Study and transform data science prototypes, Research and implement appropriate ML algorithms and tools, Develop machine learning applications according to requirements. Select appropriate datasets and data representation methods. Run machine learning tests and experiments. Train and retrain systems when necessary.
D07	IOT Specialist	Expert understanding of the Linux OS, process management, device management and connectivity, understanding of JavaScript and Node.js, understanding of IoT architecture and principles, MEAN stack development.
E	Expertise Domain: MS SQL Database Admin & Development	
E01	Database Specialist	Implement database objects, programming objects, design database objects, optimize and troubleshoot queries, installing and administering SQL Server.
E02	Data ETL Specialist	Designs data transformation flows, data loading, integration with external tools/data sources. Experienced in troubleshooting and operational tasks of managing scheduled ETL Design multi-dimension data and facts, create, process and maintains large data sets in logical cubes for analysis. Expert in MDX queries and expressions
F	Expertise Domain: Other Database Admin & Development	
F01	NoSQL Document DB Developer	Install, configure and maintain one of following possible NoSQL Document DB solutions; MongoDB, CouchDB, Couchbase. Design and develop relevant data schemas for applications in collaboration with application developers.
G	Expertise Domain: SharePoint	
G01	MS Productivity Solutions Expert: Developer	Design, develop, deploy SharePoint solutions Web Parts, workspaces, team sites. Configure custom user and group permissions. Expert in HTML, JavaScript and SharePoint APIs. Experienced in creating custom PowerShell deployment scripts.
G02	MS Productivity Solutions Expert: Administrator	Manage installations of SharePoint server, site collection administration, configuration, maintenance and ongoing server operations. Performance monitoring, patching and upgrade SharePoint.

#	Expertise Domain Role Title	Core technical requirements (not limited to)
H		**Expertise Domain: Business Analysis**
H01	**Business / Functional Analyst**	Business Requirement gathering, strong technology affiliation, ability for process mapping, use case diagrams, functional/technical requirement documentation, creation of product backlog/user stories for Agile projects.
I		**Expertise Domain: Project Management**
I01	**Project Manager/Agile Project Leader**	Agile project management, Prince2, PMP, Agile/SCRUM, Essential unified Process (EssUP), Dynamic Systems Development Method (DSDM), Agile Unified Process (AUP) Open Unified Process (OpenUP), Scrum, Extreme Programming (XP), velocity tracking , Feature Driven Development (FDD, Atlassian, (Confluence, Jira, Bitbucket), MS TFS and Azure DevOps
J		**Expertise Domain: Networks**
J01	**Network Administrator**	Provide on-going support at the T2 to Network environment and related services, participate in the automation projects, testing and deployment of Network and underlying services, and solutions, Managing and maintaining Network standard configurations and enhancements, installation and upgrade as well as assisting with the resolution of incidents and problems and fulfils users request.
K		**Expertise Domain: Cyber Security**
K01	**Cybersecurity DevSecOps Consultant**	Solve security problems, Identify and promote security champions inside developers' team, integrate security into the CI/CD pipelines and on all other SDLC phases, background in deploying secure solution, background in deploying secure solution. API Security, AWS Cloud Security and Azure DevOps. Certificate Management, Encryption, Penetration Testing, Vulnerability Scanning, Security and Monitoring tool. DevSecOps security controls and best practices.
K02	**Information Security Specialist**	Analyze existing security systems and make recommendations for changes or improvements, Prepare reports and action plans in the event that a security breech does occur, Organize and conduct tests and "ethical hacks" of the existing security architecture, Monitor the network and provide early warning of abnormalities or problems, Upgrade systems regularly to remain competitive in the field of security, Communicate the system status and keep users informed of downtime or changes to the system.

#	Expertise Domain Role Title	Core technical requirements (not limited to)
L		**Expertise Domain: Infrastructure**
L01	**Infrastructure Automation Expert**	Design and develop Ansible playbooks for automating end-to-end processes, Automate Storage tasks in Ansible to: Manage the lifecycle of luns (SAN), Manage the lifecycle of share (NAS), Patching. Automate Network related tasks in Ansible such as: VLAN provisioning and configuration, Firewall rules configuration o Switch configuration, Load balancer configuration. Automate Application and Database tasks in Ansible such as: Installing, stopping and starting, Configuring o Hardening, Patching. Automate OS/Server (Linux and Windows) tasks in Ansible such as: Configuring, Hardening, Patching. Working with Ansible Vault to encrypt sensitive data, Manage Credentials in Ansible AWX Create CI/CD with best practices for fully automated integration, deployment and testing.
L02	**Enterprise Monitoring Administrator**	Develop and maintain a web interface for the different monitoring tools, such as SCOM, Nagios and HP NNMi; Administer the monitoring infrastructure, ensuring that it is stable, up to date, well designed, properly tuned and properly maintained; Create relevant statistics for the several monitoring tools; Implement NNMi, Nagios and other monitoring tools. Knowledge of Active Directory Domain Services, SharePoint, SQL, Exchange, Skype for Business, Apache, Network devices, Lotus Domino, ISC DHCP, BIND, SNMP, Oracle databases, Windows Server and Linux operating systems.
L03	**Cloud Administrator AWS GCP**	Design, build, implementation, and delivery of scalable AWS and GCP solutions, with a focus on IaaS and PaaS; Execute assessment, migration and implementation plans to deploy AWS infrastructures and move workloads to AWS using native AWS migration or third-party tools. Knowledge of Public Cloud technologies, i.e. GCP and AWS. Proficient on core IaaA and PaaS AWS and GCP services, System Administration and operating systems (Linux/Windows), Open Source RDBMS - MySQL, MariaDB, PostgreSQL, cloud-based metering and monitoring tools. Knowledge of container architectures and deployments in cloud environments (Docker, Kubernetes, etc.). Experience in Scripting with Python, Bash, Go or similar languages and source code control like Git.

#	Expertise Domain Role Title	Core technical requirements (not limited to)
L04	**Virtualization Administrator**	Performs installations and maintenance of VMware ESXi, Microsoft Hypervisor, and OVM/OLVM, host virtualization, connectivity, performance, troubleshooting. Supports the daily monitoring, reporting, alerting, and troubleshooting of complex virtualization environments. Creates and maintains detailed technical and graphical documentation as needed. Develops/updates tools and scripts to improve and automate the administration of the virtualization operation shell scripting and automation tools (PowerShell, Perl, Bash, Python, Ansible...)
L05	**Platform Administrator**	Windows Server patching technologies as well as best practices using WSUS, SCCM and SCOM monitoring, Active Directory, GPO, FSMO roles, DNS, DHCP, Knowledge of Linux systems (Red Hat, Oracle Enterprise Linux, CentOS), Linux service (Apache, MySQL, SMB, postfix), PowerShell scripting, reporting and monitoring tools, networking protocols.
L06	**Web Windows Administrator**	Install, configure, and support Web services based on Microsoft technology, provide architecture; support to solutions in public Clouds (Azure, Amazon), Provides day-to-day operational support and maintenance of Web infrastructures and applications including user service requests and service restorations.
M		**Expertise Domain: Service Desk**
M01	**Technical Support Specialist**	Logging of support requests and event generated incidents in the CRM system and follow-up throughout the incident life cycle. Analyzing and resolving incidents according to established operational procedures. Escalating incidents when necessary and identifying and employing measures to prevent reoccurrence. Managing support requests until closure. Monitoring of the ICT infrastructure using various monitoring technologies. Informing customers of outages, known errors and resolution progress. Assisting in developing or improving technical service policies or technical documentation.
N		**Expertise Domain: Communications**
N02	**Communications Consultant**	Assist with social media, standards, and communications as a service, Support building templates, posters, presentations, and communications products. Initiate and implementing awareness raising and public information strategies and campaigns, Ensure that communication and visibility activities are effectively monitored, and that impact is properly evaluated.

#	Expertise Domain Role Title	Core technical requirements (not limited to)
N03	Service Desk for Conferences Agent	Provide support for virtual online conferences/webinars, assist in the technical training related applications to participants. Assist with assisting and guiding participants in IT related best practices. Provide informative material to participants in the required languages. Configure the virtual room based on the needs of each meeting.
N04	Remote Event Coordinator	Take full responsibility of the management of single and/or multiple events since the need is received by the organization until it is completed. Elaborate event proposals based on client requirements. Assess customer needs to provide appropriate platform and configuration recommendations for a successful event. Provide advice for efficient planning, preparation, and execution of events. Create an event plan for each individual event, identifying sponsor and stakeholders assigning responsibilities and deadlines, and ensuring adherence. Support remote conferences and assist the presenters and attendees during the event. Support audio and video setup, during the remote events. Perform the role of remote moderator if required. Coordinate with all stakeholders to manage the delivery of key event related elements; Ensure effective communication by leading planning calls and meetings to track status of deliverables and ensure timely and efficient execution of all tasks for events; Liaise with external suppliers to ensure delivery of contracted services and effective and efficient execution of all logistics for events.