

Analytical study of the types of employment Incubation and extraction technology incubator for software engineering in Iraq "Technological incubator for software engineering in Iraq" Hayder H. safi Al-jebory

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1. Introduction:

Our time is the current scientific and technical progress and the tremendous contributing to the many changes in the various fields of life, social, cultural, economic, educational, and others. Our society has entered the era of techno–logy is one of the widest doors to consumers diverse products, to develop the state itself and its members keep up with the other developed countries and civilized.

So is the development and modernization through good planning of the most important goals sought by her managers of software projects to be achieved to meet the needs of society and the demands of the growth of public and private sector, and has realized many countries the importance of planning for the construction of an advanced society is the basis of science and knowledge and use of modern technology and employment service sectors all. Has resulted in cognitive development and blasting huge scientific and technical progress in the second half of this century to the continued increase in the amount of data and information that deal with human rights in various areas of life, which urged it to search for a way to store this information and data retrieval and invest optimally and so began some communities developed into what could be called a (community informatics), a stage is an extension of the industrial stage, where the economy depends primarily on the communities (information industries) rather than on traditional industries. If communities were developed so far are the greatest wealth and most powerful economy, the next century will witness a shift in which the richness and wealth of the developed countries in terms of information. Thus began the idea of Information Technology: Information Technology by finding the appropriate methods and tools to store and organize information and speed of retrieval when needed and display the best of useful forms [1,3] . That help to take the appropriate decisions. Here, the computer as an essential element in all applications or information-related industries, as it will depend on the databases and will be the

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engine computer is a device to it. I started thinking about finding a community of scientific incubators for the development of industrial and commercial products and information, including software. Incubators are an important tool to support the growth of small enterprises in the development and marketing of their products, particularly based on the technology initiatives of individual, and that achieve high growth rates and quick within the incubator in terms of improved chances of success in light of increased competition. There has been increasing rapidly in the preparation of incubators has doubled the number ten times during the last ten years to solve the day to more than 2000 incubators worldwide, 150 of which incubator in developing countries.[1]

2.Incubation:

It seems that the term "foster technological" closer to our ears, the very places that serve as an environment for a certain thing (Baby is not complete Growth), regardless of its kind since the incubator embracing, nurturing, and provide the necessary protection to him from any risks it faces and supplied with power continuing for the purpose of maintenance. The incubator has all the needs and requirements to be provided for the development of their home through supply all the necessary growth factors and strengthening to rise and settle down and show the existence completely. Incubation seems at first like a simple idea but the reality proved to be the work of carrying between Te herewith provide mechanisms to provide a more solid jobs and produce more solid installations are offering ideas and new techniques. In the view of economists that the most important characteristic style incubators is that the services provided by selected groups of small enterprises that are likely to have high growth potential. The method of incubators help small enterprises to overcome the problems that may lead to failure or inability to realize the potential for progress, and the scope of these problems, lack of business skills and a lack of funding. In fact, the method of incubators can be implemented at different levels and in several forms, including mention of technology parks, innovation centers, which aims to nurture emerging businesses to improve the chances of survival.[1,9]

3. Definition of technological incubator:

Development institution working to promote and support youth Initiator private owners and creative ideas and innovative (innovators and thinkers) and those who Do not have logistical or financial resources and expertise to achieve high their projects and ideas. Where they are during the incubation period, the workplace and provide technical advisory services, administrative and production, marketing, financial and legal access to the establishment of institutions and perhaps the start of production and the actual work during the

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specified period of time. The incubators can be a framework that supports entrepreneurs and business leaders to adopt ideas[3]

4. Types of incubators

There are many types of incubators:

1 - incubators, technological parks: The incubator is part of an integrated project includes educational institutions, research and a diverse range of other concerns which aims to achieve development of the region.

2 - sector specific incubators: These incubators aim to exploit the resources of specific local projects to develop new business in a specific sector, and thus become the nucleus of the incubator for domestic growth.

3 - General incubators: These incubators serve a lot of business, without a specific specialization, but they may focus on the areas of innovation. Incubators and establish the general objective of this already, or may be established to serve a specific sector and then turn to the incubator general.

4 - incubators to build a business: The aim of these incubators to create a business by building the appropriate management teams capable of exploitation and development of specific business opportunities and also by the selection of outstanding students in this area and nutrition skills and information required.

5_ International Business Incubators: based on the international financial and technology in order to rehabilitate the national companies by international companies and the trend to global markets

6_ open incubators: incubator without walls include incubators that are held for the development of enterprise development and industry clusters that already exist in the form of industrial and service centers and support for industrial projects, according to solid scientific standards.

7_ specialized incubators: A specialized incubators for certain jobs in the community, for example (Acts woman, or to accommodate retirees, or recent graduates, or for groups to be targeted according to a plan of human development of countries)

8_ specialized incubators creative: be specific in the areas of creative multimedia and scientific fields designs according to needs of the country, for example incubators software in public administration [1,4,5]

5. Benefits of incubators:

There were many uses of incubators to try to achieve a wide range of targets, especially in the development of small and concentrated in the most important benefits of incubators:

- 1 - create jobs and support necessary for the success of projects,
- 2 - Development of innovative ideas, particularly in new technological areas,
- 3 - diversification of areas of activity the local economy,

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4 - and wealth-generating activity on a large scale through the creation of a vibrant sector of small enterprises.

In fact, the basic features that distinguish businesses that use incubators are innovation and growth potential, quality or management flexibility than with technology developed, and may be of such projects often are those that use or development of advanced technology, but may also include those projects that include new innovations industries within the list.[5,6]

6. Financing of incubators:

Incubators vary depending on the method of financing as well as the quality of its beginning and end of stages and usually need to foster large investments because the payments process facilities often does not cover only the cost of the property. In the U.S., for example, obtained incubators in the start-up phase on the government funding of the state or civil in order to achieve self-financing within five years, but some incubators need to be some kind of aid or guarantee the continuous, and there are incubators can achieve self-financing it, but if not up incubator to break-even point for any equal to the income and expenditure can be a finance major constraint on development, and if a period of five years can reach break-even point, it seems appropriate to have the incubator bail or aid during this period, but the conflict between the objectives of the project development and funding goals Self-selection may affect customers and the quality and diversity of services provided to them during their residence Within the incubator, and graduation policies, the end result is that the objectives of the establishment of projects followed in many cases the goals of developing the property.[1,7]

7. Objectives of incubators in general:

The purpose of this envisaged the incubator is to bring the scientific world and the openness of the surrounding economic and social objectives are technology incubators in:

- Assist in developing a plan for projects or companies.
- technical advice to help in the characterization of the product intended to be manufactured in accordance with appropriate standards, descriptions and specifications of local and perhaps international.
- Legal advice of the founding of the company and officially registered with the competent departments and agencies and may assist in obtaining the patent.
- Advice concerning the administrative structure of the company's emerging and administrative procedures.
- Financial advice to help organize the project accounts
- take advantage of the technological incubator links in a number of countries pioneering in this area is to assist residents in obtaining the scientific

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information and technical, industrial and technical support from the incubators and as needed

- Assistance to connect to financial institutions (banks, etc.) along with recommendations about the efficacy of the proposed projects and the possibility of its application and submit proposals on the amount of funding necessary.
- To assist in the establishment of an appropriate link between the project and as a foster and scientific bodies (universities, institutes, research centers, workshops, technology) to use the laboratories and workshops and to help the scientific and technical advice required either for free or for nominal sums. [18,9]
- To assist in the establishment of an appropriate link between the project and as a foster and technical workshops in the markets and industrial companies that help to implement the product models thereof, or even the entire building and manufacturing.
- the establishment of qualifying courses technical and administrative intensive companies incubated with the assistance of foreign experts or expatriates who have long experience in these areas between international organizations to that and set up training courses on issues related to the success of the project the applicant plans for projects to cover the main aspects of marketing, competition, costs and funding
- Generation renewed and technological complexity
- Create opportunities for growth and create new business opportunities
- the intensity and quality of research and development carried out by the project
- commitment and serious working group in charge

The above shows us that technology incubators are supportive and targeted according to solid scientific standards and under the supervision of cadres and specialized institutions for the success of the projects 8.sponsored by *seeing the following:*

Evaluation and development of scientific and technical research,

- Efficient utilization of human resources,
- Creating a research community in all areas and operation of research centers,
- The creation of small and medium projects with a technological nature, according to the standards of solid scientific
- Encourage the age groups emerging and newly graduated debutante and the private sector to create scientific projects economically feasible for them first, and the country second.

The main task of the incubator technology is the social and economic development of the country, and to direct all scientific research and technology

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to the application in the field of scientific and evaluate the results of research through the creation of projects of all levels based on science and technology, so that foster technological accommodate all of the fields in the public sector and private [1,9]

8. What technological incubator provides:

- 1 - incubating innovative projects and scientific small and large in the community and provide all means of research and development for these projects to make it work.
- 2 - provide better for the success and development of small businesses based on emerging science and high technology even behave in a way the biggest successes.
- 3 - create these small projects in all areas to enter projects in the development of larger and wider economic feasibility of scientific thought and according to international standards,
- 4 - Encourage the development and field studies in order to create a bank of information on these innovative projects that will support the national economy of any country, through consultation between the incubator of technological, scientific research centers, universities and sectors incarcerated this area
- 5 - To facilitate the integration of age groups, especially the newly emerging graduate projects with universities and small private and public sector in the economic fabric, encouraging them to create the active participation of labor and production companies for these projects.

It is for the success of this idea should be to adopt the public sectors in particular and some of the giants of the private sector to provide integrated environment for this incubator of (buildings, laboratories and research centers all channels logistics, scientific, technical and material under the supervision of cadres specialized in those areas and structural prepared for the incubators, technological and research centers to be under the supervision until achieving the desired objective and this requires effort and time in order to achieve the goal.[9]

9. Incubation of the proposed structure:

To propose any structure for any technological incubator for a specific institution or a particular area must take into account the following proposals for the success of *technological incubator*:

- 1) Of the Higher Committee for follow-up: mission planning, policy and technological incubator Consists of bodies of a group of government and the private sector and specialists

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2) Executive Committee: This committee according to the directives of the Supreme Committee and in accordance with the policies, to study the technical files, and follow up implementation of projects.

3) retaining commissions of the incubator: The functions of attribution for the success

of the idea of technological incubator[1,9]

10. Foster technological specifications:

Proposed technological incubator is an integrated system containing many *components of the integrated environment, including:*

- a place equipped according to the type and nature of the technology sector for projects that will be sponsored incubator. The proposed incubator for software covered in this talk.

- be for the technological incubator with a specific time period (ie, less than three years)

- provide an integrated package of services and technical support, administrative, and financial and marketing of new technology projects.

- take place within these incubators or in conjunction with universities, research centers and centers of information technology to benefit from the workshops and laboratories, researchers and scientific personnel in the Necessary for incubators proposed technological in all fields, especially software that share in a property to link scientific institutions of various kinds and possibilities of art, as well as association with universities and scientific research center and clusters of information technology, and there are some incubators, which lies directly within these centers or universities and be part of it and benefit of research and development programs existing in these centers while helping incubators are also some scientific bodies especially government institutions in attracting local, regional, and through the marketing and presentation of her research and the most important applications developed by, and the concentration of the added value and the money that financed and produced by the research within the framework of the region or that owns the place.[2,7]

11. Foster technological features of the software:

Characterized by technological incubators, which is held in collaboration with universities and research centers, the existence and support units in science and technology and aims to take advantage of the research scientific and technological innovations and turn them into successful projects by relying on the structure for this university laboratories, workshops, laboratories and equipment, research and scientific cadres specialized and aimed at foster technological foundation to the marketing science and technology through contracts and agreements made between the community researcher and business

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applications of scientific research, technological progress, which is based on partnership and cooperation as a strategy for economic development, technological progress, which is based on the ability of innovation and renewal, resulting mainly from the coordination between the initiatives of research sectors or that are working on technology development and innovation of hand and the resources of the state and the private sector on the other hand, through and within the framework of local and national economic growth so the incubators program can support the community's efforts to establish a development technology real and activate scientific research through fostering cooperation between the owners of creative ideas, researchers and business the one hand, and the investment community and those financing on the other. This new partnership based on the essential:[1,2,9, **Researcher**]

- National policies and to support a clear and modern technology Development
- A dynamic private sector of the economy and well-developed and modern technology
- National programs geared to the development of creativity and innovation within the community and attract talent in all Fields
- finding academic and scientific research inventions economically feasible and viable

12. How to build a model of software technology incubator in Iraq:

After applying the concept of incubator technology referred to above, has emerged the concept of very modern in the world of knowledge, economy and technology as the installments that the vocabulary of "technology incubator" and using them to suit the needs of the country and the adoption of ideas and concepts of innovative technology, as it is the incubator of technological framework that supports and can be entrepreneurs and men business from the adoption of innovative technological ideas by experts and scholars alike, as you snapped ideas, development and investment and access to the point from which to attract private sector investment to these areas.[**Researcher**,1]

The incubator support new companies, small and young, and by giving the opportunity to develop the capacity and potential of technological innovation, as well as the establishment of new institutions marketing some of these creative ideas, and the public sector in particular to embrace the idea of foster technological development and providing it with all types of aid in terms of financial, moral, and tools of career guidance and administrative assistance to the experts and intellectuals (intelligent of ideas and experiences) so that they may in the incubator transform abstract ideas into products with the feasibility and advantages are of such products need and demand in the global market, as

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the organizers of these projects during the period of incubation are the promotion prospects for higher investment, income, financial need and find strategic partners and support for small businesses that can stand on its feet in the face of other companies, must be supported by entrepreneurs young and creative ideas to the implementation of their projects and improve the chances of success in a world of increasing competition by providing the following services: assistance in obtaining the necessary financial resources to implement the project, assistance in the formation and organization of research and development team, providing technical and administrative advice, guidance and supervision, secretarial and administrative services, maintenance, procurement, accounting and legal advice, assistance in all capital and prepare for the marketing process as well. The acceptance criteria are to support projects in the incubator is that the project is based on a scientific basis and carries innovative ideas and technology aimed at developing the product and the possibility of marketing. It is the most important thing she went incubators is to support interdisciplinary scientific mission, including industries, petrochemical and engineering industries, medical, and perhaps the most important incubators of software involved in all areas and approved the construction industry software technology based on software-defined, so we have a special software us to not be national models only, but the software may Arab unable to continue in light of increasing competition, it must provide efficient engineering of software to manage the whole process so we need to build a model of our own technology incubator and be a complete business system including the construction of educational institutions or research aimed at developing the software[3,4,5 , *Researcher*]

13. Experiences of leading international incubators:

American experience: The oldest experiments, as Concept technology incubators back to the incubator business that have been developed mainly in the United States America through the Business Center Batavia in 1959, is the real beginning of the concept of technology incubators in the early eighties in 1984 when the government established the U.S. Commission Actions for small projects and development, and the number of incubators significantly when U.S. business incubators in 1985, which was set up by some American businessmen in the form of a private institution designed to stimulate the organization of industry incubators, and in the end of 1999 the number of incubators in the U.S. to 800 incubator through the establishment of an incubator on average per week, and now there are a number of technological incubators networks in the United States of America[6,8,9]

14. General concepts to build a technological incubator program:

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Thinking in the formation environment of the software comes to engineers to information technology that how recruitment procedures and associated software and here plays an important role engineer technology of employment possibilities and logistics software to configure the project information technology environment and the measures of thinking as well as what we have in the formation of any other environment in or any area of *specialization include the following:*

1. Re-engineering procedures, laws and standards: to be the first step to start a re-automation of procedures and convert Craftworks paper to random forms organized and arranged according to the laws that protect all the procedures according to international standards and global in completing transactions.
2. Capacity-building: simultaneously in digital transformation desired by the operators of the technology incubators should provide the requirements and the requirements of the digital transformation of the preparation of cadres and human capacity building and preparation at the physical capacity and logistics.
3. Marketing and Awareness: When you start any project must be thinking that the market accommodate this project and the possibilities of marketing and marketing methods and marketing mechanisms and what are the target groups of this product and to provide opportunities for competition in the software industry incubators.
4. International events: the link to improvements in the area and linked to international events and keep up with technological and qualitative development of the incubators and the ongoing work with the managers of these incubators.
5. International comparison: the development of standards of developed countries and the World, which preceded us in building Technology incubators and incubators employed in the service code
6. Project management: the success of any project in the sector under his management sober when management is efficient for the project is bound to succeed the same applies to software projects must meet Department of sober and highly qualified has the ability to recognize the success and constraints of the project and appropriate changes in these projects and how to address and solve problems using information technology and logical analysis of information systems and software in order to achieve the goal of the success of these projects in the incubators program
7. Monitoring and evaluation: does not work projects without supervision and constant review of each step in the project and when we think of building technology incubators need to be thinking about mechanisms for evaluation according to international standards and continuous review of the successes and failures and problems, if any, and how to avoid them until the objectives of the

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project that was developed according to the criteria Start operations in the top-yielding Identified four *dimensions of the impact on the performance of the process*: [Researcher]

impact on the auditors (as measured in how references feel positively or negatively on the process).

Impact on the issues of quality (as measured by the quality of service provided as the number of errors for example).

Impact on the cost of doing business (as measured by the main content verified).

The effect of increasing the speed of the administrative process (as measured by the importance of time during the performance of the process). To determine the degree of importance of each process was calculated according to the Madelia global account submission of applications via the Internet without the need to attend to the ministry processing and issuance of financial guarantees is automatically eligible for the scholarship without the intervention of the human factor speed and accuracy in completing transactions to obtain financial guarantees and letters of recommendation to the embassy signed and stamped (PDF) online from the website of the Ministry.

use of electronic messages (E-mail) in the process of communication and inform applicants shortcomings. request status and progress of treatment (Workflow System) of the applicant through the application number and password for the applicant.

- Axis I- the infrastructure of the shift towards e-government
- Axis II Strategic Plan for Information Technology
- Axis III – Portal
- Axis IV - the workflow system
- Axis V - Document Management and Electronic Archiving
- Axis VI - integrated information system
- Axis VII - application of best practices and global standards in Information technology
- Axis VIII - Project Management Office website
- Axis IX - the study and documentation of work procedures
- axis X - systems and applications
- Axis atheist tenth - resource planning system [1,9 7]

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