

# **Information And Communication Technology In The Arab World**

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## **Abstract**

At a time when the Arab world is in search of an appropriate technology, it is confronted with a technological giant, information and Communication Technology (ICT), which seems to be areas of human activity in the developed nations. In ICT the latest happens to be the most suitable technology.

The author believes that the developing nations will be involved in repeated Technology Transfer from the developed nations in these areas. On the other hand, there are options, opportunities and difficulties.

**The Arab world has the following options for the development of information and communication technology.**

### **Indigenous R & D**

The Arab world should have its own technology base even to import a technology and assimilate it. ICT change very rapidly, therefore, requires dynamic updating. The Arab world has one asset that is relatively inexpensive pool of skilled. The characteristic feature of this technology is that, it requires heavy financial outlay associated with significant risk, dependence on learning, sensitively to mass production and market volume and dependence on market forces, marketing backup.

### **Technology Importation:**

Some samples of positive aspects are there:

- ❖ Leap frogging to new technology can be attained.
- ❖ As a part of “technology” deal, buy-back and offset programs can be negotiated.
- ❖ “Hands on” training agreements can be achieved.
- ❖ The impedance from local industry are one of the negative aspects beside it needs large production capacity.

### **Multinational Enterprise:**

- ❖ Helps to appreciate the potential of latest developments.
- ❖ Continuous access to advancements is ensured.
- ❖ A package deal with Multinational Enterprises (MNE) directly transplants capital, technology, managerial skill, and engineers.

But:

- ❖ An MNE never establishes a local R&D center.
- ❖ Cast mechanism followed by an MNE is usually found to be irrational, and terms are never revealed.

### **Joint Venture:**

To make use of the research base of the host country in view of either skill clusters or economy.

What ever option is chosen by Arab World, the major task before it will be to achieve a changeover in all the existing ICT sectors: communication, control, transportation, medical, defense, etc, sooner rather than later if we intend to be anywhere near up to date and self reliant.

There will be three possible routes for this transformation:

- A) A revolution strategy where immediate updating and modernization of all the ICT systems are investigated. It needs enormous pressure on funds, manpower, training, etc.
- B) An inert strategy of waiting till an ICT system has completely outlined its utility and then replace it by systems based on modern electronics.
- C) An evolution strategy which is mean path between these two calls for updating the system that will meet present and future requirements and at the same time remains compatible with present environment.

### **Software Technology:**

It is the most, strategic global industry. The value of the U.S. software market is estimated at \$300 billion. The main ingredients of he previous revolution were materials (that is, atoms). The new revolution's primary ingredient is the "bit" (that is, information represented inside a computer). Software is the intangible soul of information systems, control systems, and communications. In the 2000s and beyond, the engine of growth is digital.

#### **A strategic industry marked by rapid change:**

There are two global trends which shaping ICT:

- A) The computer-based information and control systems that have changes which is matured to the point where the demand for more complex, more integrated, more robot, and more resilient software-based systems.
- B) Business and economic phenomena of the 2000s such as business reengineering, outsourcing, organization change, automated flexible production, and integrated communication services.
- C) The impact of these phenomena on ICT has been further heightened by the maturation of other basic technologies, including as multimedia, CD-ROM technology, publishing on demand, interactive television, and information highways (internet, World Wide Web, and few others).

### The Software Tangle:

Software creation and production remains largely an art. The characteristic problems for software development projects:

1. Budgets and schedules: Software projects very often exceed their schedules and budgets.
2. Low quality: The quality of the software products at the time of release is relatively low compared to other complex systems.
3. Costly maintenance: Software maintenance costs a disproportionate amount over the life cycle of the software.
4. Low reusability.

### A taxonomy of software technologies:

Software technology is composed of a broad set of techniques, tools, and systems. The following categories provide a useful frame for there different technologies:

1. Systems Engineering.
2. Tools and Infrastructure.
3. Component Repository.
4. Fundamental Technologies.

### Transfer of Technology:

The classic problems of development-education, hunger, disease, infrastructure, and social transformation, still have to be addressed. But the Arab World must also develop a future role that is different from that of technology consumer nations. Without the effective transfer of ICT and the domestication of that technology in a healthy environment-an environment that can promote its growth and its growth and its maturation to competitive world levels. Arab World will remain economically dependent not only in ICT products, but also in large inventory of other manufactured products. The relative importance of ICT to machinery, consumer electronics, vehicles and machine tools is already substantial, and it is on the rise.

### Arab World Challenge:

There are number of actionable areas that Arab World should consider to improve the chances for the growth and sustenance of a viable software capacity.

### Policies and Laws:

- ❖ An urgent need exists to promulgate and rigorously enforce copyright laws.
- ❖ Open borders for information, technology, resources, and people, to reach world competitive standards.
- ❖ Elevating the importance of ICT to the same level of strategic survival level as the national defence, economic growth, and infrastructure development.

- ❖ Eliminating censorship on resources and information relating to their technologies, particularly those relating to software.

### **Facilities and Infrastructure:**

- ❖ Development and deployment of telecommunications capabilities.
- ❖ Create an Arab World initiative to promote and increase the proliferation of access and usage of the Internet and the world-wide web.
- ❖ Standards, standards, standards, quit wasting valuable resources on variations of Arabization and agree to some standards. This will free resources to develop more important layers of the technology.

### **The Learning Challenge:**

- ❖ Schools are essential but cannot do it by themselves. Clubs, Shareware, games, and mentoring of genius are important vehicles to improve learning.
- ❖ Intensive revision of curricula at all level-and the massive introduction of programming and computer science.

### **Focused development:**

- ❖ Build competitive software products, which have local customers and that, can enhance the larger active sectors of the economy.
- ❖ Explore the possibilities for creating technology and software factories and component repository centers that are capitalized through national resources but that must survive by offering market competitive services and support. These centers earning their keep by serving their local industries.
- ❖ Focus on a few vital industries and become excellent in these. Avoid trying to acquire all the technology.
- ❖ Study the model of India and Malisya are now one of the main exporters of software products. In 1985 it exported \$16 million of product. In 1997 this is projected to be \$1 billion and planned to be \$6 billion by the end of 2000.

## References

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