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**CHAPTER TWO:**

THE CONCEPTUAL  
FRAMEWORK OF  
INTEGRATING THE  
YOUTH IN THE  
TRANSFER AND  
LOCALISATION OF  
KNOWLEDGE

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## Introduction

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Knowledge lies at the centre of the elements of production in modern economies. It is a tool of economic growth, job creation and development in a modern economy, or knowledge economy. Knowledge has become increasingly salient, as a result of globalisation and scientific and technological developments in recent decades, notably information and communication technology (ICT).<sup>1</sup> The transfer, production, localisation and usage of knowledge, in all economic and daily activities has become the key to growth and development. It is only when knowledge is employed, institutions assume its management and people can assimilate it, that creativity, innovation and renovation expand, and knowledge is actively and genuinely localised, to achieve further economic and social development. Growth and productivity are linked to the growth and intensity of knowledge and to technological advancement in the production processes. Both, i.e. the intensity of knowledge and technological advancement, are characterised by a dynamism in their link to outputs and highly-skilled employment growth. This requires the preparation of a highly qualified human capital, through increased attention to education, training and institutional development. These factors are considered the tools of progress in knowledge-based development. And herein lies the importance of the youth, a resource ready to be turned into human capital, as well as into knowledge assets that would form a lever for the process of knowledge transfer and localisation. The youth bulge in the Arab region represents these assets and potential wealth.

### The Tetrad of Knowledge, Globalisation, Youth and Development: A Complex Relation

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The current Arab Knowledge Report (AKR) takes up from the Arab vision of knowledge, established by the two previous AKRs. These reports presented an integrated concept for this vision; a concept that is not merely limited to science and technology. Knowledge is an integrated whole that

represents all human innovations in the fields of science, technology, humanities, arts and the extensive human experience. Based on this broad concept of knowledge, the second AKR 2010/2011 also established an integrated perspective for the knowledge society, “as a state of historical progress on the ranks of human civilisation; to be understood in its broad connotations. It is a society of intensive knowledge in terms of production, use and distribution, and its members are characterised by their knowledge, behaviour and values. These characteristics interact in social, political and cultural environments which nurture and stimulate them and support the creativity and innovation capabilities among society members.”

In line with this broad vision of the knowledge society concept, the relationship included in “the integration of the Arab youth in the transfer and localisation of knowledge” is not a simple linear one. It is rather a dialectical complex relation that involves profound challenges. There are multiple parties in this case and each with its own problems, opportunities and challenges, centred around four elements: the first is knowledge, with regards to its transfer and localisation and the global and local contexts that surround it. The second is the youth, with the report taking specifically the age group 19-29 for study purposes, as this age category finds itself amid a demographic composition that is inherently problematic, not only in terms of its diversity and its different geographical and social characteristics, but also in terms of the need to equip it with values, skills and knowledge that qualify and enable efficient integration into the knowledge localisation process. The third element is globalisation, its relation to knowledge, technology, economy and development, and the great contentious debates revolving around the opportunities and challenges of development. But, regardless of the nature of the disagreement over this phenomenon, globalisation has become an essential part of our civilisation and is something we must address. The fourth element is the structure of Arab development in

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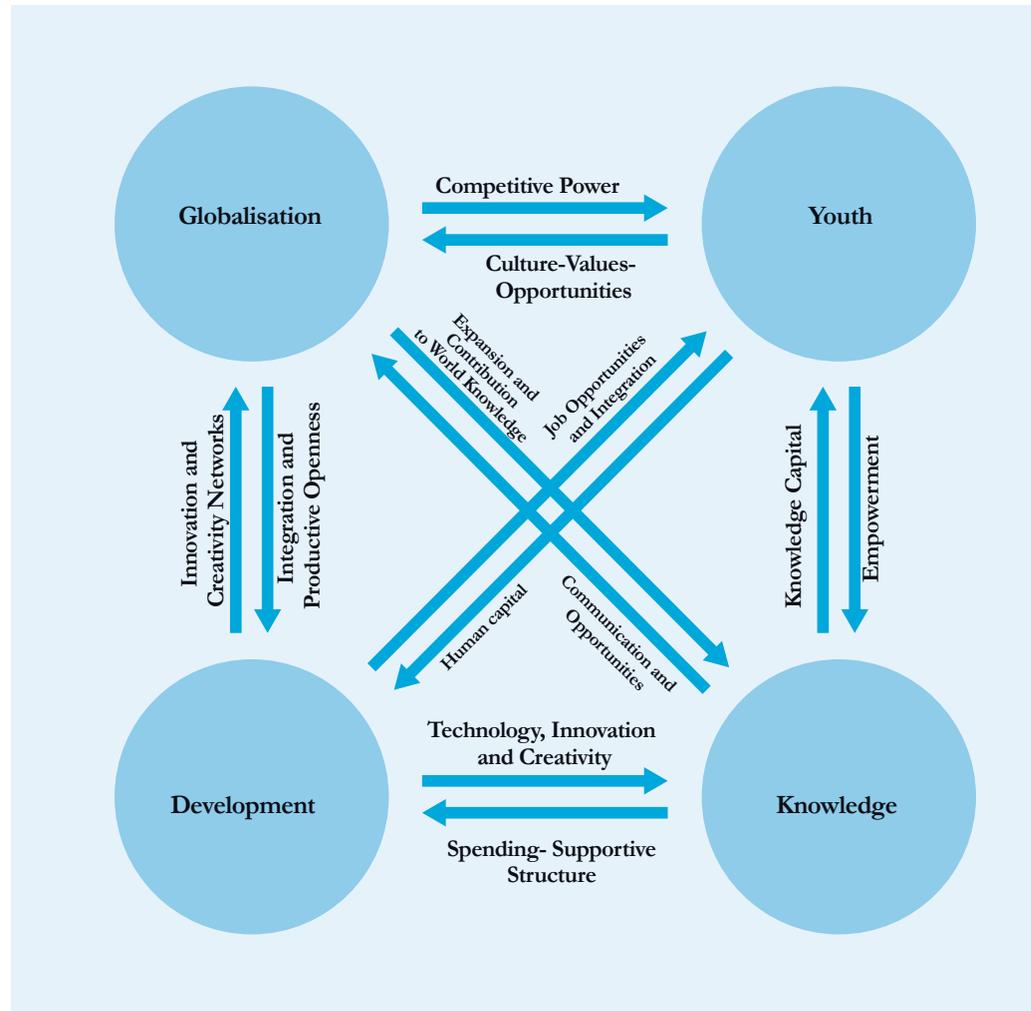
its social, cultural and political contexts, through which young people interact with knowledge transfer and localisation processes. This also includes the extent of opportunities, capabilities and choices available to the youth in this reality; and the challenges they entail. Figure 2.1 explains these interactive relations between these variables or the four elements.

is efficient for the economy amid global competition. In view of this, the current chapter focuses on these four variables to determine the following key concepts:

- What is the meaning and nature of knowledge; and what is the meaning of the terms associated with it, such as the knowledge society and the knowledge economy specifically?

Figure 2.1

**The Tetrad of Knowledge, Globalisation, Youth and Development**



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The call for the localisation of knowledge and the efficient integration of the youth put us face to face with four key interacting variables: knowledge, globalisation, youth and development. These four variables constitute the favourable environment for achieving economic and cultural development and make available the institutions to train the youth and prepare them as a force that carries knowledge and

- What is globalisation and what are its impacts on knowledge, the knowledge society and the knowledge economy? And how do we deal with it in the process of the transfer and use of knowledge in order to localise it?
- What do we mean by the youth as a force that needs to be integrated efficiently?
- And what is the active characteristic in development that should be available as a

necessary condition for the achievement of a just human development that ensures the efficient integration of the youth in the process of knowledge transfer and localisation, in the framework of open scientific relationships that surpass the limits of time and space? And what is the role of cultural enlightenment in achieving this development?

## Knowledge: Intellectual Contexts and the Concepts of Transfer and Localisation

### The Concept of Knowledge and Its Classifications

First of all, it is necessary to distinguish between knowledge, information and data. Data is recordings or statistics on specific facts, such as reading of certain numbers or measurements, while information is the processing of this data and the drawing of logical and statistical relations between its various parties, to conclude generalisations or formulate relations between several variables. Knowledge is the product of information processing to arrive at ideas, concepts and theories. Knowledge goes beyond information, and includes awareness, understanding, interpretation and theorising as a product of information processing, in the context of a live experience based on education, higher education and scientific research. Subsequently, the relation between knowledge and information is dialectical, as the production of knowledge depends and is based on the analysis, application and processing of information. And in turn, information is produced in the context of knowledge guidance, awareness and concepts in a particular area. Reliable databases and statistics remain the foundation representing the quality and relevance of information and knowledge.<sup>2</sup>

With regards to classification, we are particularly interested in distinguishing between explicit knowledge and tacit knowledge. What is the nature of this knowledge and its importance in the processes of transfer and localisation? And how is it transferred and invested?

### Box 2.1

#### Knowledge Classification

Traditionally, knowledge has been classified in four categories:

- “The knowledge of what”: it refers to the knowledge of facts and information; this is a type of knowledge that can be encoded, transferred and contained in various combinations of information and data.
- “The knowledge of why”: it refers to the principles and laws of nature, society and the human mind.
- “The knowledge of how”: it refers to the inherent skills and understanding of how to perform a specific job or make something. Although this kind of knowledge is not explicit in a specific meaning for just physical capacities, it generally indicates an ability to understand how to produce something or do a certain job.
- “The knowledge of who”: it refers to the knowledge of who knows what, and it also means knowing an individual's ability to grasp initial knowledge and appropriate expertise to solve a specific problem.

*Sources: Gorman, 2002 and Johnson et al., 2002.*

Explicit knowledge is the knowledge that can be embodied and coded, so that it can be learned and invested (in fields such as education, research centres and ICT development centres). This knowledge is encoded when it is registered and transferred as codes (writings or drawings) or when it is embodied in physical forms (machine or device). Through coding operations, knowledge is reduced to information, which in turn can then be converted into knowledge by passing to the minds of individuals to whom an analytical symbol or framework is available. In this way, knowledge is spread across borders, either embodied in concrete forms or through electronic networks or any form of documentation.

Tacit knowledge<sup>3</sup> is a knowledge that cannot be coded or documented, but is implicit in the minds of individuals and their behaviour, inherent in their technical and life expertise. Unlike explicit knowledge, it is only transferred through direct interaction, learning, training and dealing with raw experience. This type of knowledge is often referred to as the know-how. And because of its nature, the acquisition of tacit knowledge requires a long time of engaging in direct

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Tacit knowledge is a procedural knowledge, a practical ability and a cognitive system. It plays an important role in the development of science and modernisation of technology

experience with the ones who possess it. This is why this type of knowledge is less prevalent and harder to transfer than explicit knowledge. Tacit knowledge is complex and can be analysed, based on studies of knowledge, in three patterns:<sup>4</sup>

- The first pattern of tacit knowledge can be called as such, when equal to competence. It includes physical abilities and skills that refer to the individual's ability or capacity to learn how to perform or carry out a particular activity without being able to describe the knowledge used to perform the task. This knowledge pattern has an unreflective and automatic feature (knowledge of how to breathe, for example). It can be knowledge resulting from learning, training and a life experience (knowledge of how to play a musical instrument), or knowledge of how to perform a skill (swimming or riding a motorcycle). This pattern is rather the carrying out of activities that follow a set of rules which are not clearly or explicitly known to those who perform them. This applies in all life practices that require specific capacities to be performed or are carried out through activities that are difficult to describe accurately in clear details. This knowledge is difficult to transfer and learn, unless transferred through imitation and apprenticeship based on face-to-face interaction. One of the most effective training patterns is education and on-the-job training, which is learning by doing.
- The second pattern is tacit knowledge as background knowledge of an individual or group. It can be defined as a set of cultural and biological capabilities that involve pre-theoretical assumptions, trends and consensus. This pattern constitutes cognitive pre-conditions in the process of accumulating cognitive theoretical formations. This pattern of background knowledge is gained and formed through the process of upbringing and acculturation, or rather through the individual's life

and professional experience, in its broad historical sense. This is what makes background knowledge familiar to the individual. It requires self-consciousness, so as to change it or use it by transferring it to third parties or by third parties absorbing it. This pattern of tacit knowledge acquires great importance for those who work in the field of theory, production of ideas, innovation and research development.

- The third pattern refers to tacit knowledge as implicitly-held cognitive rules, reflected in the individual's self-justified doctrines, the information he or she believes is valid or the rules employed in how he or she thinks and realises. Chomsky notes that this knowledge pattern does not appear in the form of specific meanings or skills. It is rather considered a realistic cognitive system determined to be a state of mind and builds a knowledge that cannot be explained in words or described in a whole language. It is a pattern of knowledge that is not taught but learned by the individual through life experience.<sup>5</sup> This pattern of tacit knowledge is close to what Thomas Kuhn<sup>6</sup> called paradigm, i.e. the intellectual pattern embraced and adopted by a specific scientific group in practicing and producing science/knowledge. These principles and methodologies are transferred to the new members (research students) through offered scientific products and the academic socialisation and integration among the members of the scientific group. That is the basis of the formation of schools of intellect and science.

In all cases, tacit knowledge in its previous three forms is a procedural knowledge, a practical ability and a cognitive system. It plays an important role in the development of science and modernisation of technology.<sup>7</sup> One of the most important elements of the knowledge economies is that the volume of specialised and distinct scientific knowledge that is internalised in the minds and behaviours of individuals and groups actually constitutes the fundamental

basis of modernisation and innovation processes.<sup>8</sup> In contrast, we find that less developed economies struggle with forms of explicit knowledge for particular productive work and basic economic survival, at the expense of ignoring the need for tacit knowledge. Tacit knowledge here includes knowledge management inside and outside an establishment or the management of the application or implementation, as this is the same knowledge that enables the economy's sustainable growth, innovation, development and renovation.<sup>9</sup> Thus, it is imperative for the Arab region to focus on tacit knowledge as an essential part that enables knowledge as a whole to play its role in human development.

### The Knowledge Society

The knowledge society was established as a result of multiple and successive historical revolutions in science and ICT. These revolutions upheld the value of the scientific mind, scientific thought, freedom, social justice, equality and democracy. The human being and its skills, values and creativities became the axis and basis in the formation of the knowledge society. And because the second Arab Knowledge Report expanded the discussion of the concept of the knowledge society in terms of its origination, evolution and relation to the peoples' present and future, we refer the reader to the conceptual chapter of the aforementioned report,<sup>10</sup> and limit ourselves in this section to recalling some of the details directly related to the areas of interest of the current report: "the transfer and localisation of knowledge".

There is concurrence among many knowledge sociologists and researchers that what we are experiencing today is an aggregate state for a community that interacts by influencing and being influenced in all aspects by the revolution of science and technology. We might find examples of the maturity of this case in some countries in the developed world. In this framework, we can distinguish between at least three interacting factors. The first factor is that progress is a result of the intense growth

and increased investments in ICT and their interaction, not only limited to the fields of communication, information, electronics sciences and nanotechnology, and robot sciences, but including the field of genetic engineering, biotechnology, optics and other fields of science. The second factor is the growth of international relations as a result of this revolution and globalisation that put the world economy in a dynamic market hegemony that is beyond traditional concepts of space and time. The third factor is the demands of the cognitive and technological revolution in terms of economic growth, the production market and the global economy which have led to the emergence of a qualitative new human capital with personal characteristics, values, knowledge, skills and new patterns based on training, education and culture, constituting the driving force for all the dynamics of change in the family, society and the world.<sup>11 12</sup>

We agree with many researchers that the term "knowledge society" refers to a broader concept that includes the society as a whole, the economy, culture and politics. Thus, this report establishes the concept of "knowledge society" as including the concept of the "knowledge economy". In fact, the effect of intense knowledge and technological progress has made a distinct impact on the economy, and has turned its structure from a traditional economy based on overall production factors into an economy based on knowledge and the cognitive capital in its association with comprehensive globalisation. However, the concept of "knowledge society" is broader than economy and more comprehensive than economic progress.<sup>13</sup> A knowledge society includes these influential developments and rapid changes in economy, as well as all associated cultural and sociological consequences, including the characteristics and capabilities of the human being.<sup>14</sup>

According to the concept of the knowledge society, investment in education plays a pivotal role in the development of human resources and the expansion of youth opportunities and abilities to contribute to the historical quantum leap. In this context,

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knowledge workers become the basis for the development of economic wealth, while the main activities producing wealth no longer reside in the use of raw materials, capital or labour, but rather in the added value “being produced through innovation, creativity and the application of knowledge at work. The value of goods is determined in the knowledge that lies in the final product”.<sup>15</sup>

### The Knowledge Economy and Its Characteristics

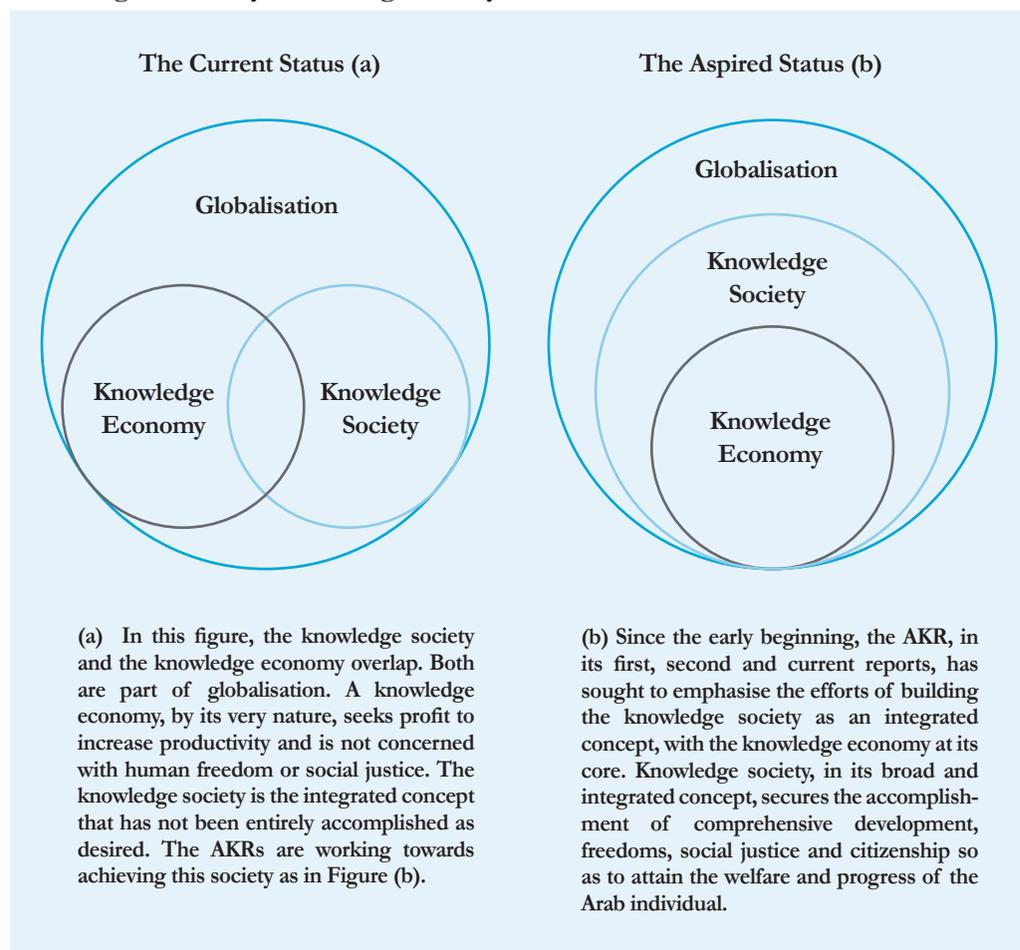
Knowledge economies are at the heart of the knowledge society, which forms and is formed in the context of a new and ever-expanding global civilisation; one with the human being at its essence: creativity, knowledge, technology and innovation.

Knowledge economies are those that are based on the intensive production,

dissemination and use of knowledge. They are essentially described as economic structures that arise in the context of the global knowledge society, where the success of economic development depends on the possibility or the extent of the available balance of knowledge, skills and creative capabilities in development and modernisation.<sup>16</sup> Figure 2.2 shows the vision of the contemporary global civilisation, the knowledge economy, the knowledge society and globalisation, based on the production of knowledge, the technological revolution, creativity and innovation. The circles constitute the pattern of development in communities seeking to enter into the knowledge society and integrate with global civilisation, as well as integrate young people and direct their efforts toward achieving knowledge-based development within the three global action circles. So what are the characteristics of the knowledge society?

Figure 2.2

### Knowledge Economy, Knowledge Society and Globalisation



### **Main Features of Knowledge Economies**

Knowledge economies are characterised by a set of attributes that can be generally summed up in the following eight key attributes:

1. A knowledge-intensive economy in terms of production and availability;
2. The intensity of ICT use;
3. The emergence of knowledge as an economic product, with the growth of knowledge trade and its circulation based on the rights to intellectual property;
4. The increase in the proportion of knowledge workers;
5. The increase in knowledge impact across economic sectors;
6. The emergence of knowledge management as increasingly important systems and practices;
7. The emergence of systems of innovation and modernisation; and
- 8) The ability of knowledge to be transferred and developed.<sup>17</sup>

### **The Increasingly Intensive Use of IT**

The intensive use of ICT is an important feature of the knowledge economy. However, it must be emphasised that the information technology revolution is not necessarily synonymous with the advancement of knowledge economies. Moreover, the intensity of the use of internet, mobile phones and computers is not necessarily synonymous with the knowledge economies or an accurate indicator of them.

ICT is characterised by its support of the development of the knowledge economy and knowledge society in several aspects, the most important of which are: first, these technologies are widely utilised in various domains and applied in an orderly manner in the economy and social areas. Second, they become a paradigm,<sup>18</sup> a new technology, and a base for innovation and creativity; and they have been bringing about major changes in the methods of research, production and services. Third, the technologies become an infrastructure for an industrial revolution that changes the methods of production, management and interactions and widely

supports its contacts with local and global social and cultural changes.<sup>19</sup> In addition, technology has not only enabled human beings to understand the physical and social world around them, but has helped them understand themselves and manage and develop knowledge. Thanks to technology, ideas become a key factor in the management and education of the individual and the institution.

The volume of internet networks and their interdependence allows for the collection and dissemination of encoded knowledge in an unprecedented manner. With the increased potential of programming and its integration within an economic entity, the pace of creating innovative new knowledge becomes faster. An example of this is what technology programmes made possible in global scientific cooperation through coding human genes in 2003, which supported new knowledge about genes, leading to the advancement of genetic modification medical technologies.<sup>20</sup>

The use of ICT and the reliance on knowledge to achieve high economic growth, led South Korea, for example, to obtain a relative advantage in accelerating economic growth, outpacing many competitive countries of comparable standing during the 1960s. Statistics show that South Korea has achieved a steady economic growth rate reaching an average GDP per capita of USD 14,000 in 2005, exceeding the growth rate of Malaysia, where the GDP per capita exceeds USD 4,000, Brazil and Tunisia where the GDP per capita was estimated at USD 4,000 and USD 2,500 respectively for the same year. South Korea ranked ahead of all Arab countries in its competitiveness capabilities according to the Arab competitiveness index.<sup>21 22</sup>

### **A Knowledge-Intensive Economy: Productivity and Availability**

The intensity of knowledge production and availability through publishing houses, universities, professional networks and other means has increased. The availability has especially increased during the last three

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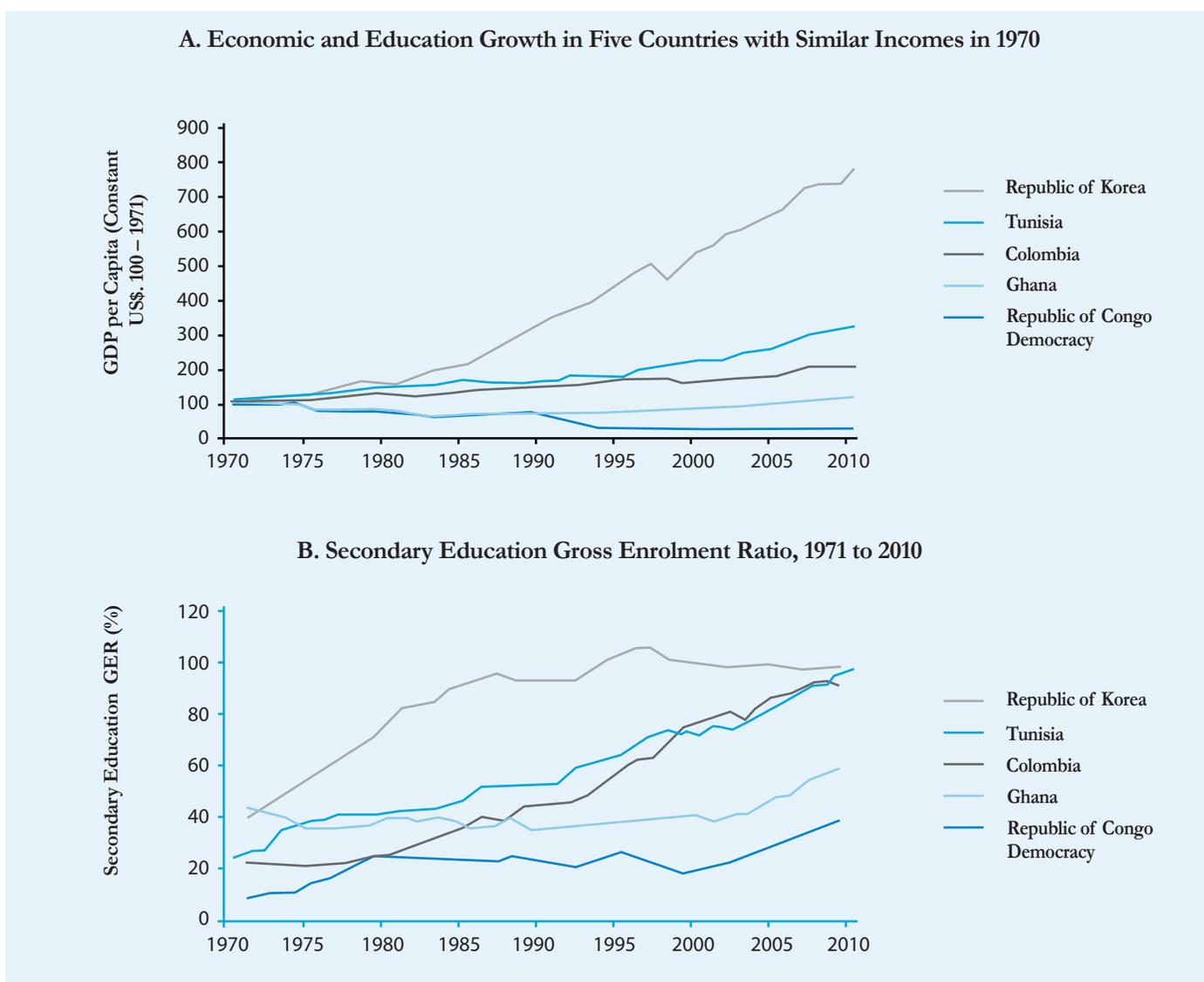
decades as a result of ICT use, leading to an increase in the number of new knowledge products. At the same time, the rate of technological development and progress also increased. The growth of “research and development” activities (R&D) and education has become an indicators of knowledge growth and outputs in an economy.<sup>23</sup>

In addition to the importance of knowledge production, studies indicate an equal importance of its employment. Obtaining technological and scientific knowledge and the ability to capitalise on it have become a critical strategic factor in determining

the economic performance of different countries, especially with the increase in globalisation and economic competition. The leading countries in the fields of knowledge, science and technology have enjoyed a much higher long-term economic growth rate compared to developing countries.<sup>24</sup> The average growth rate in the former group of countries was estimated to be about three times that of the rest of the developing world from 1986-1994. The Education for All Global Monitoring Report confirms that one dollar spent on education generates between 5 to 15 dollars of the economic growth rate in developing countries.<sup>25</sup>

Figure 2.3

Investing in the Development of Skills and Enhancing Economic Growth: The Korean Experience



Note: The year 1971 was set as a reference year in the first graph with the value of GDP per capita equal to 100. Source: UNESCO 2012

The role of knowledge materialises in shaping and supporting economic growth, particularly in relation to education, considered one of its most important pillars. For example, five countries had similar rates of income per capita in 1970: Columbia, the Democratic Republic of Congo, Ghana, South Korea and Tunisia. Forty years later, the average income per capita in South Korea greatly exceeds the averages in all these countries, as shown in Figure 2.3. This success achieved by South Korea is not only attributed to the improvement of its education policy but also, and even more importantly, to the link it established between the development of knowledge, skills and general strategies that aim at activating its economy.<sup>26</sup> The case of South Korea is considered a good example on the employment of knowledge to achieve a renaissance and economic development, where knowledge achieved an accumulation of up to 75% in the economic growth as measured by the GDP per capita. This can be compared with up to 25% of the growth attributed to capital and labour, being the two traditional factors of production.<sup>27</sup> (See Figure 2.3).

### ***Commodification of Knowledge***

Knowledge has become a commercial product that can be sold and purchased in markets. This is done by providing information databases, scientific research publications, R&D services, educational services, consulting services or technology software licenses; and these are knowledge-intensive services known as “other commercial services”. Knowledge commoditisation is manifested at its peak in the context of globalisation, where large companies seize knowledge that was previously free. This issue has become standard international practice regardless of its serious and controversial social implications. A common example relates to large pharmaceutical companies that in the past provided the pharmaceutical components of drugs to developing countries for free. A second example is the application of the laws of intellectual property in agriculture. These and other

examples refer to the “rights” reclaimed by giant companies as “property rights”, after being provided previously as free-of-charge goods to small businesses in developing countries.<sup>28</sup> This has caused the collapse of many industries in several countries of the third world, and increased the monopoly of large companies, leading to a rise in the price of some vital products for developing nations. In 2005, North America had the largest share of international bills per intellectual property right (44.2%), followed by European countries (36.9%).<sup>29</sup>

Knowledge is increasingly gaining a competitive advantage in any project, which in turn has prompted the incentive toward trade protectionism. Issues of intellectual property rights and related rights have risen with the development of human creativity, up to the current era characterised by a rising knowledge revolution reaching unprecedented heights. In the age of knowledge and digital technology, the controversy over the adoption and dissemination of intellectual property laws and practices has heated. Views differed depending on the location of the concerned state or institution with regards to the production, use and employment of knowledge. Some strongly called for the protection of property rights, i.e. the most advanced countries in terms of knowledge production, while developing countries consuming the products of knowledge voiced opposition for this approach. Viewpoints on intellectual property were contradictory and oscillated between calls for absolute freedom and calls for strict protection. Conflicting parties have involved principles and perspectives that may seem harmonious at first glance, but in fact reflect extensive dialectics that are even contradictory in many cases. Supporters of protecting intellectual property rights base their opinion on the principles of free trade and the rights of the knowledge producer to reclaim the cost of production and development as well as its profits, while the counter party is armed with the principles of open access and free movement of information and knowledge, and the rejection of their monopoly and commoditisation.

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Knowledge workers are those in sectors that require intensive knowledge and information analysis, such as engineers, doctors, scientists, university professors, lawyers, administrators, journalists and others

In this context, knowledge as a benefit, according to one researcher, should be made available to all, and any acceptable system of intellectual property must be balanced between the cost of monopoly and the social benefits of innovation, by limiting the duration of the patent.<sup>30</sup> In the same vein, a World Bank report noted that stricter intellectual property rights may render knowledge acquisition more expensive. In fact, it sets the bargaining power at the side of knowledge producers and not users. And because knowledge is the main component in the production of more knowledge, the firmness of intellectual property rights might adversely affect the sub-innovations in developing countries and industrialised countries that make use of innovations with unfinished patents. Hence, it is feared that the firmness of intellectual property rights will actually slow down the pace of innovation in general.<sup>31</sup>

The issue of intellectual property, which represents one of the most important channels and mechanisms of knowledge transfer and localisation, has not received adequate attention in the Arab region as a whole, both in terms of legislation or practice (as will be shown later in the fourth chapter). In all cases, the biggest winners in the commoditisation of knowledge will continue to be the developed countries that will keep progressing, and the losers are the developing countries that will increasingly move backward because of the monopoly and privatisation of knowledge. Hence, the importance of this report becomes clear, as it aims at helping countries in the Arab region with the localisation of knowledge and the active integration of the youth in its operations, so that the Arab states can produce knowledge and contribute to the building of a more just and humane civilisation.

### **Increase of the Proportion of Knowledge Workers**

“Knowledge-intensive labour” refers to activities that are associated with the sectors of high-tech production and services. Knowledge workers are those in sectors

that require intensive knowledge and information analysis, such as engineers, doctors, scientists, university professors, lawyers, administrators, journalists and others. The designation of “knowledge workers” indicates four categories of cognitive capacities that fall into high-quality cognitive capital groups, namely:

- First: Knowledge workers are those belonging to highly-skilled supervisory, administrative and technical groups in the staffing structure;
- Second: Focused within higher education graduates or graduates from an equivalent level of education.
- Third: Includes professional activities that require intellectual expertise (researchers and other professionals) and other activities that require advanced communication skills (teachers, coaches, employees in the sectors of marketing and some managers);
- Fourth: Falls within the specialty of those who are direct producers of knowledge assets (teachers, coaches, marketing experts, workers in R&D activities, and insurance and finance experts) and indirect producers (supervisors, scientists in natural sciences, professional social workers, technicians and nurses).<sup>32</sup>

### **Box 2.2**

#### **The United Kingdom, an Example of the Increasing Number of Knowledge Workers**

If we take the United Kingdom as an illustrative case, we find that knowledge workers have constituted in the first quarter of 2006 around 42% (based on the European definition). In the UK, this percentage was much lower (31%) in 1984. It was also expected that this rate will increase in 2014 to over 45%.

*Source: Brinkley 2006*

While it is difficult to globally compare the growth rates and size of the group of knowledge workers, because of the disagreement among researchers on the

definition of the term, available data supports the existence of an increasing demand for knowledge workers, as opposed to a lack of demand for less skilled workers. While the share of knowledge functions rise every decade at a rate of between 4 and 5%, low-skilled jobs decline by about 2-3%. Some studies show that medium functions associated with traditional industries are on their way to disappearing in some developed societies.<sup>33</sup>

In fact, this entails a problem that the AKR had previously highlighted in its reference to the double impact of the knowledge economy on the labour market. In this economic pattern, investment in knowledge leads to an increase in employment, boosts job opportunities, and creates new jobs, hence increasing the demand for labour, particularly high-skilled workers. Therefore, it is a very selective pattern that would lead to the exclusion and marginalisation of other groups of workers, increasing unemployment rates among low-skilled workers. In addition, workers selected by the knowledge economy receive high wages and large incomes, resulting in a gap in the equitable distribution of national wealth. This places a greater responsibility on the Arab countries that find themselves facing a very important challenge: transforming into the knowledge economy, while focusing on firmly addressing this contradiction, using a variety of developmental approaches that achieve compromised balance between economic growth and social justice. Only then will progress be reached.

Among the by-products of the knowledge economy, and due to the increasing economic and social demand for intensive knowledge labour, we note the increasing investment of developed countries in the provision of the greatest number of opportunities in higher education so as to provide a larger high-education taskforce, along with an ability to continuously pursue education for life. The impact of that has been directly and intensively demonstrated in European countries (Refer to Chapter 4). Canada was the first country where more than 50% of the population in the age

group 25-34 had entered the labour market qualified with higher education. It was followed by South Korea.<sup>34</sup> The group of developing countries in East Asia joined this competition, and researchers noticed that the number of students in higher education in these countries doubled in just one decade. One study successfully predicted that this progress would result in a five-fold increase in spending on education between 2007 and 2012.<sup>35</sup>

### Box 2.3

#### The Problematic and Contradiction in the Structure of the Knowledge Economy

Many reports emphasise that countries must make difficult choices when setting priorities in the development process. Concentrating public resources around the most favoured groups who are highly skilled will not bring equitable prosperity. Therefore, efforts must be concerted in order to improve the skills of the total population and focus on the sectors that can provide better job opportunities for most young people, as soon as they acquire the necessary skills. The process of knowledge transfer and localisation requires conscious and inclusive development plans, taking into consideration all aspects of economic, social, cultural and political development.

Source: UNESCO 2012.

Higher education has become an important development institution in the knowledge economy

Thus, higher education has become an important development institution in the knowledge economy, with four essential responsibilities:

- Ensuring that the human capital is well-prepared.
- Building the pillars of knowledge in society through scientific research and development research.
- Disseminating and using knowledge by interacting with economic institutions in the areas of production and services.
- Managing knowledge in society as a whole, in terms of transfer, dissemination, use and localisation throughout its divisions

and scientific centres specialised in storage operations, organisation, staffing, production, publishing distribution and relations with centres of production and services.

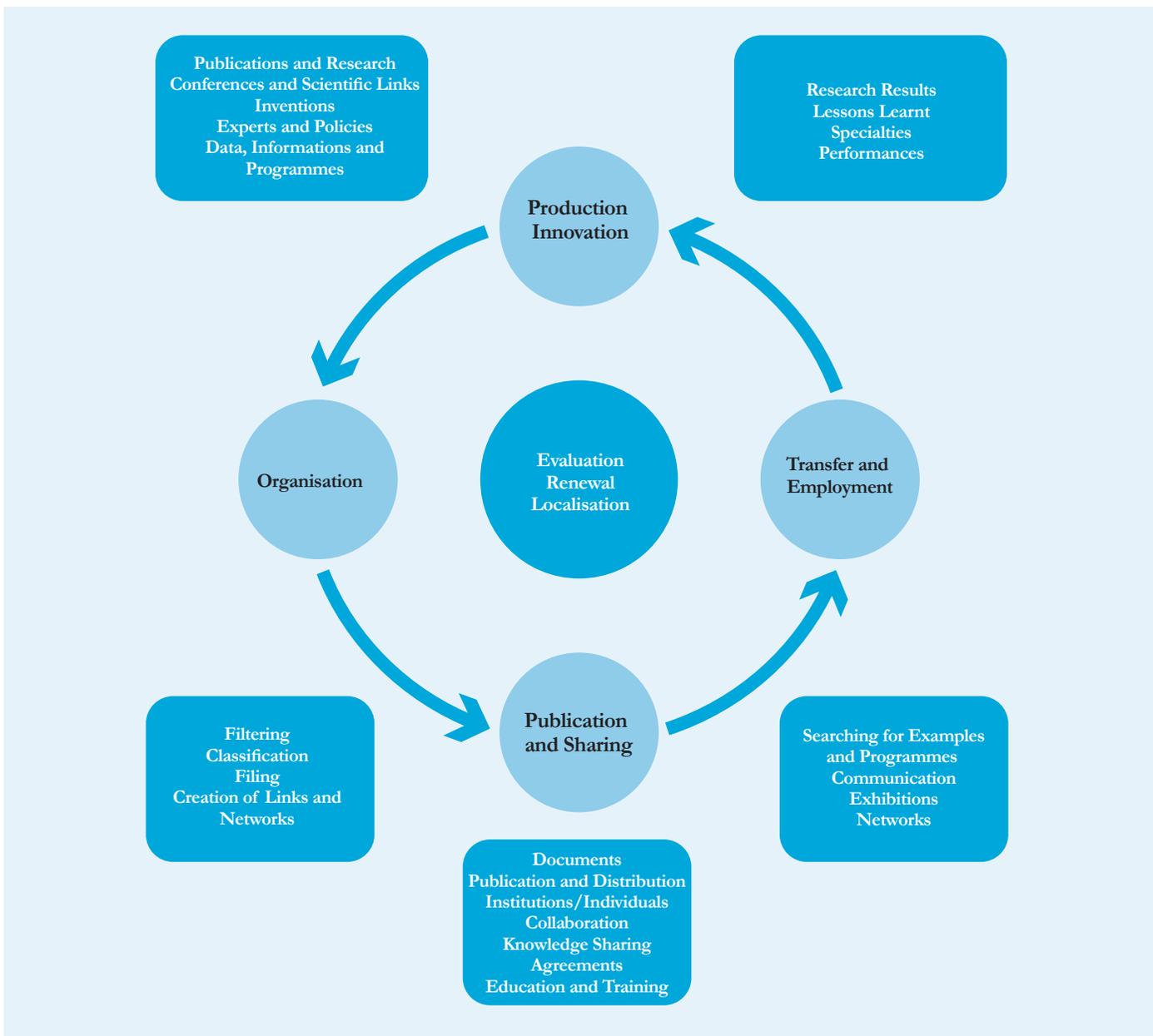
**The Growth of Knowledge Management Techniques**

The emergence of knowledge management techniques and their diffusion in knowledge economies have brought great development in supporting government and private

institutions in various economic sectors to maximise the return of the cognitive balance and develop the capacities of their members to produce new knowledge and intensify creativity and innovation. In fact, the efficient use of knowledge supports the relative advantage, and ensures the advancement of any organisation or institution that offers as such its products or services. Institutions have realised the importance of their knowledge assets (wealth of knowledge) and resources that enable innovation, creativity and proper

Figure 2.4

The Cycle of Knowledge through the Management of Knowledge from Transfer to Localisation



Source: Psarras 2006 (adapted).

response to the accelerating changes in a globalisation that has opened up competition.<sup>36</sup>

This interest has created a basis for the development and implementation of knowledge management across institutions, both at the level of processes (knowledge acquisition, conversion and use) and infrastructure (information technology, organisation structure, leadership and the culture of the organisation).<sup>37</sup>

It should be noted that knowledge management is achieved through four stages: storage and organisation, publication and sharing, innovation and production, and use and employment.<sup>38</sup> Added to these stages are two processes: the evaluation and the renewal of the assets of knowledge and informatics in an institution or organisation.<sup>39</sup> Figure 2-4 illustrates the cycle of knowledge through knowledge management from transfer to localisation, in institutions – public, private or service-provider – academic universities and research centres. There is agreement among experts that knowledge management in its tetrad cycle, from transfer to localisation, needs organisation, education, technology and leadership. Without a complete and total consistency in the interaction of these four pillars, success in knowledge management within and outside projects is not possible.<sup>40</sup>

Knowledge management is initially based on the transfer and localisation of explicit encoded knowledge, through the building and intensive use of highly efficient information systems. Knowledge techniques initially dealt with tacit knowledge, through the adoption of practical models of knowledge innovation and dissemination.<sup>41</sup>

Knowledge management reaches its peak in terms of effectiveness and efficiency within any organisation, when it can draw the tacit knowledge inherent in the minds of the members of the organisation and convert it to knowledge forms that are transferable and usable by third parties, making it available to all.<sup>42</sup>

#### Box 2.4

##### **The Context of Cognitive Skills: The Perspective of Britain (Excerpt from a Speech by Former British Prime Minister Gordon Brown)**

Already our Asian rivals are competing not just in low-skilled manufacturing, but in high-tech products and services. Once, we worried about a global arms race. The challenge this century is a global skills race and that is why we need to push ahead faster with our reforms to extend education opportunities for all. In a globally competitive national economy, there will be almost no limits to aspirations for upward mobility. Globalisation dictates that the nations that succeed will be those that bring out the best in people and their potential. And this is the new opportunity for Britain. Put simply: in the past, we unlocked only some of the talents of some of the people; the challenge now is to unlock all the talents of all the people.

*Source: Brown et al. 2008.*

It is worth mentioning that the main obstacles to the processes of knowledge advancement and transfer in the Arab region are related to the weak mechanisms and skills within knowledge management sectors, which are supposed to enable the localisation, production and employment of available and transferred knowledge. Our interest in this part of the chapter is directed towards the parties managing development in the comprehensive sense, so that knowledge management can become an integral part, or even the axis and engine for the overall operations of the establishment of the knowledge society, in organisations, inter-agency interactions, or in the country as a whole.

#### ***Systems of Creativity and Innovation***

If the transfer of knowledge is important, then time, place and people are of the utmost importance in this process.<sup>43</sup> In this case, there must be an active role for governments seeking to progress, in order to promote the process of the transfer, production and localisation of knowledge.

The establishment of systems for innovation and creativity is considered one of the most pivotal roles in any society. Innovation or creativity is regarded as a social process (or

There is agreement among experts that knowledge management in its tetrad cycle, from transfer to localisation, needs organisation, education, technology and leadership

processes) shaped and constructed through institutional societal structures and inherent in the interactions of these structures. If we have emphasised economic growth, labour productivity and investment in cognitive capital (technology and human capital), it is because all of these factors are strongly shaped through society's institutions that sponsor the establishment of innovation and creativity systems.

The concept of national systems of innovation and creativity is defined through the focus on disseminating knowledge that is useful for economic growth. The essential role of innovation systems is to transfer and employ the capabilities of institutions and companies working in innovation and creativity across sectors, countries and global regions.<sup>44</sup> This definition focuses on the function of national innovation systems as factors that represent a competitive advantage for each of the sectors and for the country as a whole. This feature depends on the progress of these innovative and creative systems and the extent of interaction between their various components, as well as their ability to integrate into the economic process.

Changes in the structure of the economy and technology require changes in the structure of society's institutions and the laws that govern the behaviour within and between these institutions. Some countries might possess scientific elements or distinguished researchers, but lack the institutional and legal frameworks as well as a supportive cultural structure. This situation inhibits the advancement of knowledge, innovation and creativity. One study confirms that the institutions, supporting laws and regulations that define behaviour and scientific and social action lead to the continuation of research processes.<sup>45</sup> These also work to promote innovation, renovation and creativity, and provide a base of trust in knowledge and its learning and dissemination rules. These are the first requirements for overall change that supports economic and social development. In turn, these activities support R&D activities and the structural organisation of the fields of finance and investment in

knowledge, intellectual property rights and the regulation of licensing and recognition of inventions and innovations. The same study presents a model of research, innovation and creativity that is based on the political and legal social structures in a society. This model also builds on the structure of the market, the technological infrastructure, structures and systems of institutional incentives and the effectiveness of institutions, including the quality and costs of communication.

#### Box 2.5

#### Conditions for the Knowledge Society and the Knowledge Economy

In an important study conducted by the Organisation for Economic Cooperation and Development (OECD) in 1996, it was confirmed that in order for these countries to succeed in the establishment of the knowledge society and the knowledge economy, they must provide for the development of institutional structures, build national systems of innovation and creativity, equip the basic technology infrastructure, and provide incentive systems that support investment in research, development, education and training. These goals are best achieved through adopting policies that emphasise the following: first, the dissemination of knowledge through education and training programmes, networking between universities and research centres in industry and government and the dissemination of technology in education and production institutions; second, developing the human capital through the formation of young people and the workforce, developing public education systems, establishing incentive systems for individuals and institutions to continue learning and improving the engagement and coordination between skills acquired and the cyclic work demands of skills and knowledge; and third, the organisation and building of institutional capacities and the support for institutional change, through continuous organisational change and development processes in the facilities that offer products and services, in terms of infrastructure and knowledge management within the enterprise and the culture of the enterprise and staff.

Source: OECD 1996.

#### The Transfer of Knowledge

The transfer of knowledge and technology has defined humanity since its earliest history. Technology was transferred for the most part along with the associated knowledge, through business relationships taking place between the East and West

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The concept of national systems of innovation and creativity is defined through the focus on disseminating knowledge that is useful for economic growth

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Changes in the structure of the economy and technology require changes in the structure of society's institutions and the laws that govern the behaviour within and between these institutions

or between the south and north, including the Arab region during the flowering of Islamic civilisation, and many world regions, including Europe. In the context of current developments this transfer took different extensions, and there emerged some specific conditions for the transfer of knowledge and technology. Following the emergence of the knowledge economy as a result of successive revolutions in knowledge and technology in the modern world, and with the emergence of globalisation, there was clearly an intensive growth of knowledge in goods and services and an increased appreciation and value for knowledge production and use.<sup>46</sup> Knowledge became a strategic commodity of an economic outcome crucial to the success of development and progress. Specific social and cultural conditions became necessary for the transfer and localisation of knowledge, in addition to the legal and political conditions imposed by globalisation today.

**What Does the Transfer of Knowledge Mean?**

The transfer of knowledge can be defined as those processes by and through which the experiences of others are transferred to a certain organisation, or to a unit in a particular organisation, or even to a country through its specified organisations or institutions. The transfer of knowledge is a complex issue based on technology, organisations and communication between the people involved. Technology is used to help achieve this communication between human beings, and between the source of knowledge and the recipient of knowledge. However, the machinery and tools can only deal with information, while knowledge can only be dealt with by humans. In other words, it is the human cognitive power that turns information into knowledge. Organisations are very important in the transfer of knowledge processes, but knowledge can only be transferred and acquired when the transfer process depends on organisational structures. Many students confirm that the transfer of knowledge depends on the culture of the individuals to whom knowledge is transferred, i.e. on

the personality traits of individuals, such as values, experience, motivations, beliefs and the stock of knowledge. Therefore, the role of organisations/institutions is vital as the links between technology and culture, in improving the processes of knowledge transfer. However, the role of technology in knowledge transfer depends on the appropriateness of the technology itself for important factors such as: 1) The cognitive abilities involved in the process of transfer to the recipient; 2) The cultural environment where and to which the transfer is taking place, and 3) The specific goals of the process of knowledge transfer and the strategies employed in this process.<sup>47</sup>

**Box 2.6**

**The Transfer of Knowledge**

Traditionally, the dominant transfer was that of the transfer of technology, in the form of tools, machinery and equipment. But today, the transfer process includes that of knowledge and information; for example, computer software and new ideas that may not accompany any machines. Experiences in the transfer of technology showed that technology cannot be transferred without knowledge. This is the key to controlling and managing technology. Knowledge transfer is a key and dynamic factor in the transfer of technology. One researcher defined the transfer concept as “the movement of science and technology from one group to another and this movement includes the use of knowledge and technology and their utilisation”.<sup>48</sup> Various studies have shown that this natural transfer, alongside organised and unorganised exchange of knowledge and technology, is vital to the success of any facility and the progress of any society that wishes to access the knowledge society.

*Source: Li-Hua 2006.*

It would be instructive to distinguish between the transfer of knowledge, the localisation of knowledge and the absorptive capacity for the localisation of knowledge. Localisation requires the internal production and employment of knowledge, unlike transfer, which might be limited to importing knowledge products from abroad. Therefore, the transfer of knowledge is considered a necessary means for its localisation, albeit insufficient. The transfer of knowledge and

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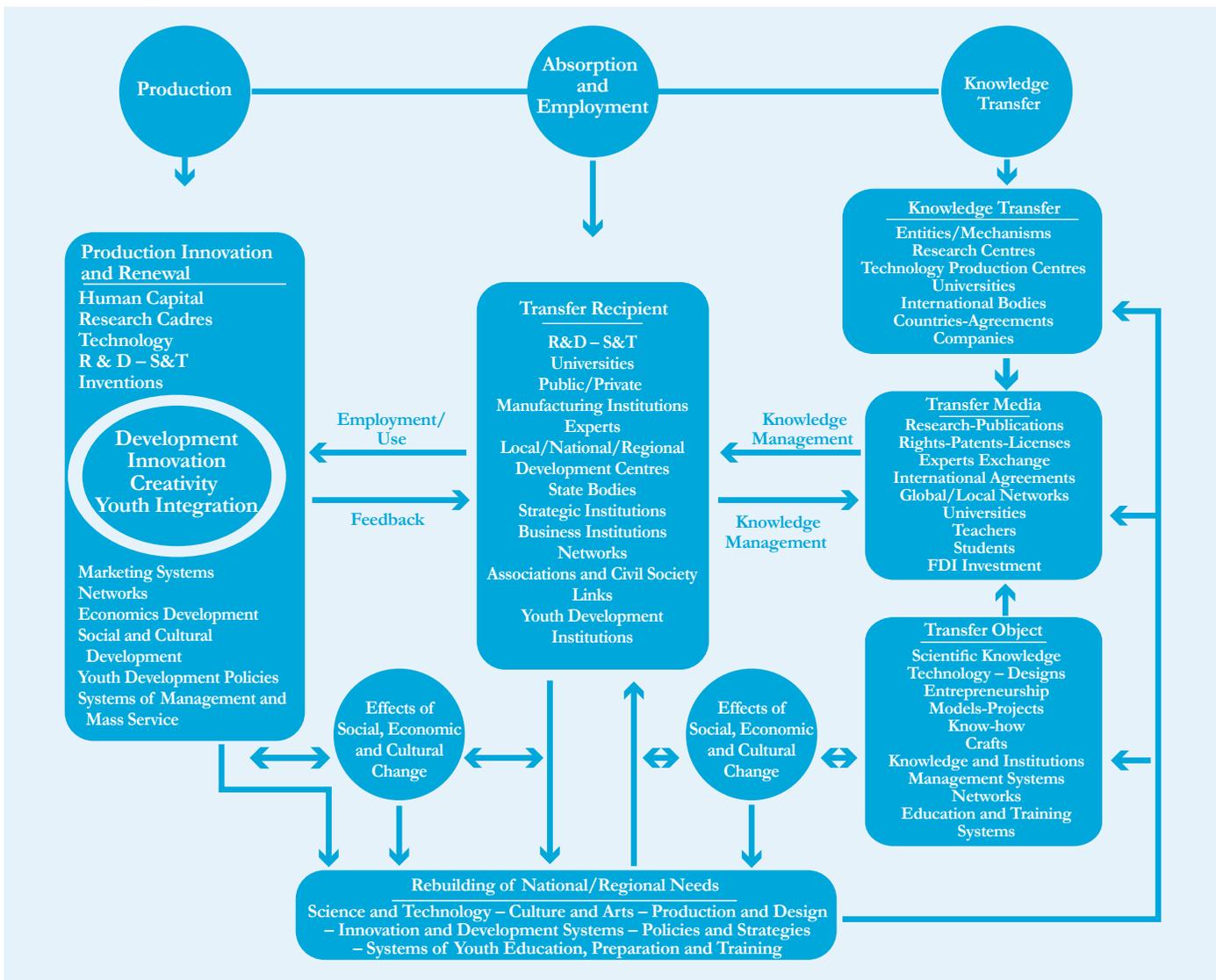
The transfer of knowledge can be defined as those processes by and through which the experiences of others are transferred to a certain organisation, or to a unit in a particular organisation, or even to a country through its specified organisations or institutions

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It would be instructive to distinguish between the transfer of knowledge, the localisation of knowledge and the absorptive capacity for the localisation of knowledge

Figure 2.5

The Knowledge Localisation Model



Source: Bozeman 2000.

Model adapted from the Bozeman model to comply with the concepts of the present report. The Bozeman model is a unidirectional model moving from transfer to production, but the current model in this report finds that the transfer process is interactive in all its stages. There is no linear relation between transfer and production. The sum of interactions between the processes and steps of transfer, employment and production in the current model is what constitutes the knowledge localisation.

The absorptive capacity of the recipient is essential for the success of knowledge transfer and localisation

technology becomes useful when strategies of knowledge transfer integrate in and merge with the policies and strategies of knowledge localisation and production. The “absorptive capacity” refers to the availability of enabling environments, financial and human resources, education, training, infrastructure, ICT, R&D and intellectual property rights. The absorptive capacity of the recipient is essential for the success of knowledge transfer and localisation. In other words, the success of any individual, institution, or country in the transfer and localisation of knowledge depends on its ability to employ knowledge and information

in business and enterprises.<sup>49</sup> Figure 2-5 shows the set of interactions in the process of the transfer, utilisation and production of knowledge towards its localisation.

**Mechanisms of Knowledge Transfer and Localisation**

Knowledge is transferred from its carriers (individual, organisation or country) to recipients or users (individual, organisation or country) through several channels. In this context, we are to distinguish between internal transfer and external transfer of knowledge across countries.

In terms of the external transfer of knowledge, international studies have identified several different channels for the global transfer of knowledge across countries, including, for example: direct foreign investment, licenses, patents, import, international trade, ICT, education, training, international migration and the movement of human capital.

Knowledge can also be transferred through academic institutions, universities, research centres and industry sectors, as well as through the reciprocal relation between producers and consumers.<sup>50 51</sup>

- Foreign investment is regarded as one of the most effective and fastest mechanisms of technology dissemination and an important channel through which knowledge is transferred. The viewpoints that support the effectiveness of this mechanism are based on the argument that direct foreign investment is considered one of the important channels that involve the acquisition and transfer of international technology and knowledge transfer across international borders directly from parent multinational companies to their foreign branches.<sup>52</sup>
- Information and communication technology is considered a key tool to access digital knowledge, improve access to knowledge, facilitate the production, assimilation and rapid dissemination of knowledge and improve the transfer of written/encoded and tacit/implicit knowledge.<sup>53</sup> Computer and communication systems also play a vital role in the transfer of knowledge and the improvement of the exchange and sharing of explicit and tacit knowledge by facilitating communication over long distances and exchanging a large amount of information.
- International migration and mobility of human capital: Most studies today agree that knowledge transfer is linked to the movement of human capital, labour and highly skilled migrants.<sup>54</sup> Also noted is the importance of international migration

for knowledge-based economies and its role in building national technology and achieving economic development.<sup>55</sup>

This growing recognition of the importance of the movement of human capital as a conduit for knowledge transfer is based on the argument that all individuals moving from one place to another carry knowledge, and that humans transfer and carry tacit/implicit knowledge, which is inseparable from the holder of knowledge, which can help disseminate written/encoded knowledge.<sup>56</sup> This is added to the belief that the value of international migration and human movement is not just limited to the transfer of human capital, but also extends to the transfer of physical capital and knowledge transfer.<sup>57</sup>

- In addition to the above, many researches confirm the important role of cognitive abilities in the transfer and localisation of knowledge. Cognitive abilities include the acquired cultural capital and personality traits of an individual or individuals, such as experience, values, motivations and beliefs. In an organisation, an individual's ability to represent, apply and use information and knowledge by relating to previous knowledge is considered one of the major factors in the processes of transfer and localisation. Since the transfer of knowledge is influenced by the relationship between the knowledge carrier and its recipient, similarities between individuals and/or organisations or within these organisations concerned with the transfer of knowledge involves important challenges that should be addressed in the policies of economic and social development. Studies reveal that the similarity between the recipient and the source is useful in terms of the transfer of knowledge through training, while this similarity constitutes an impediment to creativity and innovation that are nurtured where the two parties of knowledge transfer are less similar.<sup>58</sup>

With regards to the relationship between knowledge patterns and ICT, which are indispensable in the management, transfer,

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## Box 2.7

### The Role of Knowledge Patterns in Catalysing the Relationship between the Transfer of Technology and Economic Development

To determine the relationship between the transfer of technology and economic growth, and the role of knowledge in its different modes in the activation of this relationship, one notable study built on a survey conducted in three provinces in China, aiming to transfer technology in the field of architecture and construction through Sino-Foreign Joint Ventures.<sup>62</sup> The first province was Jiangsu, which is characterised by high economic growth and Sino-Foreign investment (about 20,500 companies). The second was the province of Henan, which has medium growth and less Sino-Foreign investment than Jiangsu (about 2,000 companies). The third was the Xinjiang province, which has the lowest growth rate and the least number of Sino-Foreign business ventures. Statistics had not yet shown the exact number of projects there. The comparative study of these three provinces showed important results for those who draft the policies of knowledge transfer and localisation, summarised as follows:

1. There are four components in the process of knowledge transfer and localisation: the technology used, the knowledge, the organisation and the product. Knowledge is the main factor that contributes to the tuning process of technology as a whole. It is important to understand the implicit and explicit knowledge needed to support the process of technology transfer. The study confirmed that the effective transfer of technology cannot take place without the necessary transfer of knowledge. The model that the study reached shows that knowledge transfer is central to the success of technology transfer. Knowledge cannot be transferred without technology and technology cannot be transferred without knowledge.
2. The effectiveness of the transfer of knowledge and technology in a local territory increases whenever there is a clear organised relationship between a foreign factor and a local factor. The local territory does not benefit from the localisation of knowledge and technology, if the relationship is between a foreign organisation carrier of knowledge and technology and another foreign organisation or contracting company, which also recognises the entrepreneurship that has been built and equipped to the local recipient (turn-key model). Relationships between local organisations do not often involve any innovation or development in the process of

the transfer and localisation of knowledge and advanced technology.

3. Tacit knowledge plays a key role in the process of the transfer and localisation of knowledge and technology. It is the main component in establishing a continuous and permanent comparative advantage in a facility. There is always a problematic relationship between that which is transferring the knowledge and the knowledge recipient. This relation clearly appears in the process of knowledge management within the enterprise between the foreign and domestic departments in the joint ventures that have been studied.
4. There is a positive correlation between the transfer of knowledge and the level of economic growth in the territory or organisation into which knowledge is being transferred. Results indicate that the need to transfer knowledge increases whenever the level of economic growth does. And whenever the level of economic growth increases, the demand for tacit knowledge increases, such as in the case of the need to be familiar with the methods of “knowledge management” applications within the enterprise and beyond. The demand for explicit knowledge is higher in the less developed regions, for there is an obvious need to obtain explicit knowledge embodied in certain technologies or programmes for the production of a particular product.
5. There is a strong positive relationship between the growth patterns of the required technology, the transferred technology, and the level of technical growth of the recipient. The gap between the level of technological growth of the recipient and that of the donor has an adverse effect, in spite of concerns related to support agencies and their assistance in the process of the transfer of knowledge and technology in the three regions studied.

The previous five results have important implications for economists when addressing the economic challenges, at both macro and micro levels. They are also important for government policymakers in addressing the shortcomings in the transfer and localisation of knowledge and technology and supporting the development of appropriate action plans and procedures for the transfer, management and localisation of knowledge.

and localisation of knowledge, most writers consider that technology (based on the explicit knowledge that can be encoded and indirectly transferred) is not enough without human intervention (and the human implicit knowledge that cannot be encoded or

transferred). Therefore, companies always search for a good model of knowledge transfer; a model that balances between the approaches to ICT and those to human beings. One researcher<sup>59</sup> confirms that knowledge can be transferred either as

The value of international migration and human movement is not just limited to the transfer of human capital, but also extends to the transfer of physical capital and knowledge transfer

a subject that can be directly observed, stored, transferred and employed, or as processes, i.e. that support interaction between people, through which the creative capacities of individuals are shaped and grow by exchanging knowledge and sharing life experiences between the source of knowledge and the recipient.

This implies that formation and apprenticeship, as well as technologies, are the right path to transfer knowledge, especially implicit knowledge. It also implies that employment and collective practice are the path towards knowledge localisation. The importance of cognitive abilities among individuals within the organisation concerned with the transfer and localisation of knowledge is of specific emphasis, as well as that of the cultural environment, the organisational structure of the enterprise fostering the transfer process and the rational governance it entails, and the cognitive ability to manage the processes of knowledge transfer and localisation.

### Globalisation: Problems, Opportunities and Risks

The phenomenon of globalisation emerged as a result of the revolution of technology and information, the increasing prevalence of information and knowledge among humans, the increase in similarities between communities and groups, the cross-border expansion of production and media enterprises and the dissolution of obstacles and barriers between communities. Our contemporary world, despite the differences and existing borders, has become a small village. Thomas Friedman describes this phenomenon as the “flat world”, distinguished by the fact that knowledge is available for all and that it quickly spreads and circulates between the corners of the world. In this world, knowledge goes beyond the limits of time, space and borders and allows developing societies such as China and India to obtain the historical wealth of knowledge that has occurred in advanced societies and to begin their progress towards a knowledge society, by virtue of “belonging to one open world”.<sup>60</sup>

Accordingly, globalisation is a historical process. Or rather, it is a set of historical processes, which include profound and tangible transformations in social and political relations that have crossed the borders of continents, regions and nations, until they reached local communities, adults and young people, in towns and villages in any country in the world. This initially occurred at the beginning of the last two decades of the twentieth century, which marked the beginning of the emergence of the second wave of globalisation with the increasing expansion of giant industrial enterprises in their industrial and trade practices across geographical borders.<sup>61</sup> The escalation of globalisation continued until it became the enormous power dominant today. Globalisation has grown with the companies it benefitted; giants in economy, media and culture and centres of global political strategies, to the extent that the term “multinational” is no longer expressive. These companies surpassed it; they acquired the term trans-nation, or cross-nationalities/countries.<sup>63</sup> The term “states without nations” has recently emerged; it does not only mean that borders between countries are disappearing, but includes the reference to local issues within a certain country from the perspectives of globalisation.

In this sense, globalisation has become strength, and this strength has increased based on several pillars that were formed historically. Many studies confirm that the following are some of the most important among these factors:<sup>64</sup>

- The power of globalisation was first based on influential networks of global institutions, such as the World Bank, the International Monetary Fund and the World Trade Organisation and the agreements they concluded and the regulations they defined. This is in addition to the patterns and models of processes, arrangements and standards governing the activities between the centres and the various international entities around the world. It was also based on the links and software sets in politics, economy,

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Globalisation is seen by many to carry promising opportunities for humankind, especially in the developing world, where we have seen attempts to establish small communities capable of competing globally and building the knowledge society. Yet, there are many other voices warning of the great dangers of globalisation

culture and media and the emergence of new competition-based markets. These markets are committed to global standards and programmes that specify the prices, quality and policies of global production.

- The power of globalisation, secondly, was based on the World Wide Web, thanks to the advancement of ICT, software and networks. Through these technologies, globalisation widened the base of communication with companies and branches increasingly scattered across the globe to achieve its economic, political and cultural functions.
- Thirdly, the power of globalisation increased by the quick and safe movement of capital across countries, by a simple press of a button on the computer through global communication networks. The way funds are snatched away from their original sources and social contexts to reach global spaces that surpass time, place and culture, has created a flow of money that is centred around specific geographical constituencies in the West and the newly emerging industrialised countries, further strengthening the dominance of globalisation cluster countries. This has also led to heated competition and created unequal divisions. Everything has come to orbit the globalisation networks and rules. In the same way, human capital and highly skilled labour and experts have moved, leaving their countries for the new global workplace. This did not exclude economies, nor workers and experts, nor the arenas of education, teachers and students, which led to the globalisation or internationalisation of many centres of expertise, universities and decision-making centres and the liberation of highly qualified labour and experts from the constraints of movement.

Many of the world's elite have been associated with global forces and not their countries, and in many cases, they left their countries of origin that suffer from

poverty and underdevelopment. Many marginalised communities emerged in most countries – areas suffering from poverty and discrimination – to constitute what some researchers now call the “Fourth World”. These areas were separated from their homelands and the world due to poverty and were left alone with no power or voice in the world. We also find elites separated from their homelands enjoying wealth, knowledge and science, and are integrated instead within the forces of globalisation.

Globalisation is seen by many to carry promising opportunities for humankind, especially in the developing world, where we have seen attempts to establish small communities capable of competing globally and building the knowledge society. Yet, there are many other voices warning of the great dangers of globalisation. These writings are based on the fact that knowledge economies, that are the economic heartbeat of the knowledge society and the phenomenon of globalisation, are not different from other capital economies. They involve various risks, such as the ones raised by the researcher Joanne Roberts when she said: “If the growth of economic globalisation has a major impact on driving forward the processes of developmental progress in many countries of the world, it nevertheless left behind gaps of underdevelopment and poverty in more than one place in the world, at the country level and between the different countries of the world. There are more than three billion people, i.e. nearly half the world's population, still living below poverty line (with less than USD 2.50/day). In 2005, 1.4 billion people, or nearly a quarter of the population of the developing world, were living below the poverty line of USD 1.25/day. The poor people of the world are exhausted from trying to earn a living every day and have very limited to rare opportunities to improve the quality of their lives through the acquisition of knowledge and skills that will enable them to catch up with the knowledge economies in the context of a hegemonic globalisation.”<sup>65</sup>

However, some believe that globalisation has helped intensify the competitiveness between

countries and companies. Multinational and transnational companies have been playing a major role in stimulating creativity, innovation and evolution. Therefore, globalisation has become a driving force for evolution. This is opposed to the view that globalisation has strengthened the new hegemony of the northern hemisphere countries in knowledge production sectors across the globe, as reflected in the dominance of the English language on global communication networks, and the influence of transnational companies on knowledge production elsewhere. Supporters of this view add that the WTO agreement, on Trade-Related Aspects of Intellectual Property Rights and the proliferation of organisations to protect Intellectual Property Rights (IRs) globally, has also contributed to this.

Hence, “globalisation is opportunities and risks”, as expressed by Al-Sayyid Yassin,<sup>66</sup> making it imperative for developing countries to seek progress and catch up with the knowledge society by developing policies and visions to integrate the youth into the processes of the transfer of knowledge, overcoming the contradictions and benefiting from the opportunities. In this regard, we confirm that the revolutions in knowledge, ICT, knowledge economies and globalisation sweeping the world today are revolutions in interactive, intertwined reciprocally reinforcing circles, so that no circle can be dealt with in isolation. That is the unity of civilisation, which can no longer be ignored, and we must accept its standards, beginning with knowledge and its requirements to build knowledge economies and ICT, and deal with this comprehensive entity, which is “globalisation”, so as to seize opportunities and manage the risks.

### **The Globalisation of Skills**

Within the framework of the organisation of economic globalisation, giant multinational companies have globalised skills and labour, leading to the establishment of something very similar to a global division of labour. These companies have taken the lead in the emergence of the first wave of globalisation during the 1980s and 1990s of the last

century. The second wave of globalisation, at the end of the 20<sup>th</sup> century, witnessed the transition from the phenomenon of multinational companies to that of cross-border companies. After this increasing globalised growth, these giant companies had the power to control the movement of the global economy, and then set the groundwork of the international division of labour and economy and the globalisation of knowledge, skills, higher education and labour force. These companies worked on the integration of the sources of trained human wealth globally, especially creative and talented individuals, and on the determination of the quality and standards of required labour skills and values. At the same time, these companies helped their homelands remain the centres of development of coordination strategies, integration and brain-work centres, while pursuing high production quality in different geographic areas that offered the global skills required at lower costs of production, as is the case in China and India, for example. That is how the global distribution of highly qualified and skilled labour force has become today a major determinant in the competitive advantage of every country that aspires to progress within the context of globalisation as set by these multinational companies.

The policy of these cross-border (multinational) companies has crystallised in a strategy of separation of two elements: “where thinking with efficiency, creativity and innovation takes place, and where production at a low cost and with high efficiency is being offered.” The place for thinking is where exists a critical mass of people (cognitive capital) who are aware of the meaning of organisation and have the thinking skills and collective communication skills essential for development, problem-solving and crisis management, in addition to potential capabilities driving development and creativity forward. Creativity and development cannot depend solely on the skills of individuals, companies or universities working individually, but requires essentially a culture of joint action, mutual interests and work partnerships to support

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“Globalisation is opportunities and risks”, as expressed by Al-Sayyid Yassin, making it imperative for developing countries to seek progress and catch up with the knowledge society by developing policies and visions to integrate the youth into the processes of the transfer of knowledge, overcoming the contradictions and benefiting from the opportunities

The problem of the youth and the localisation of knowledge is at the centre of Arab development and the potential success in expanding opportunities and developing abilities

the developmental research, the design research, and the overall development of products in emerging economies.

However, the acceleration in research and higher education systems in developing countries seeking to progress, such as China and India, and their focus on building networks of scientific research, localising and employing knowledge and preparing huge cadres of higher education outputs capable of operating in these networks, will transform the strategies of cross-border companies in separating “thought centres” from “production centres”. Therefore, China, India and other countries going through the process of the localisation of knowledge become thought and production centres as well, reducing the cost and providing quality and efficiency.

Also, in the context of the globalisation of skills and knowledge, there emerged new international programmes and standards, and a movement of internationalising education. Education has become a launch pad of the power of globalisation within a country, through building new world-class cadres. Globalisation has unleashed new potentials and determinants for universities and research centres. This is an important step for policy-makers to consider in the policies of knowledge transfer and localisation.<sup>67</sup> While the peoples and nations of the world want to transfer and localise knowledge through the development of their universities to build knowledge societies, they find international standards and programmes and the internationalisation of universities as mechanisms for the establishment and emergence of new classes and discrimination in education, which often lead to a separation from the unity of the homeland and its local needs. The Arab region, just like all the regions of the world, has been affected by the so-called “movement of internationalisation of universities and globalisation of skills” with its pros and cons.<sup>68</sup>

There is no doubt that the globalisation of high skills and high-level intensive knowledge will reflect in the near future on

labour structures in developed countries, leading to a decrease in the need for middle-class CEOs and middle-class professionals and engineers. This is also expected to affect the cost-effectiveness and benefits of these same categories of employment. Giant multinational companies strive for high-level skills and knowledge with low-cost production. So does this represent a big opportunity for Arab countries to transfer and localise knowledge and form places suitable for the emergence of knowledge economies?

## Development

### The Necessity of Social Justice in Knowledge-Based Development

The problem of the youth and the localisation of knowledge is at the centre of Arab development and the potential success in expanding opportunities and developing abilities. The readiness of young people for the transfer and localisation is a developmental issue in the sense raised by Amartya Sen.<sup>69</sup> This means that the demand for the transfer and localisation of knowledge is inseparable from the demand of development in its economic, political and social dimensions, and cannot be separated from the individual’s capacity to choose. Development is the expansion of the opportunities and the development of human capabilities at the same time. Young people are the holders of knowledge and the driving force of development. At the same time, development is what provides the youth with opportunities that enhance their readiness to achieve sustainable progress, thus enabling them to contribute to the access of the knowledge society.

Development, according to Amartya Sen, is synonymous with freedom; freedom is the capacity of development to expand the choices before the human being. The previous AKR 2010/2011 built on the triad of knowledge, development and freedom, making it necessary to clarify the pattern or structure of the relationship between knowledge and economic growth. It is true that knowledge is the pillar of economic

growth. However, it cannot be simplified, because the relationship between knowledge and economic growth is not simply a linear and unidirectional one, but rather involves a challenge already addressed in the previous AKRs; one represented by the contradiction inherent in the knowledge society and the knowledge economy.<sup>70</sup>

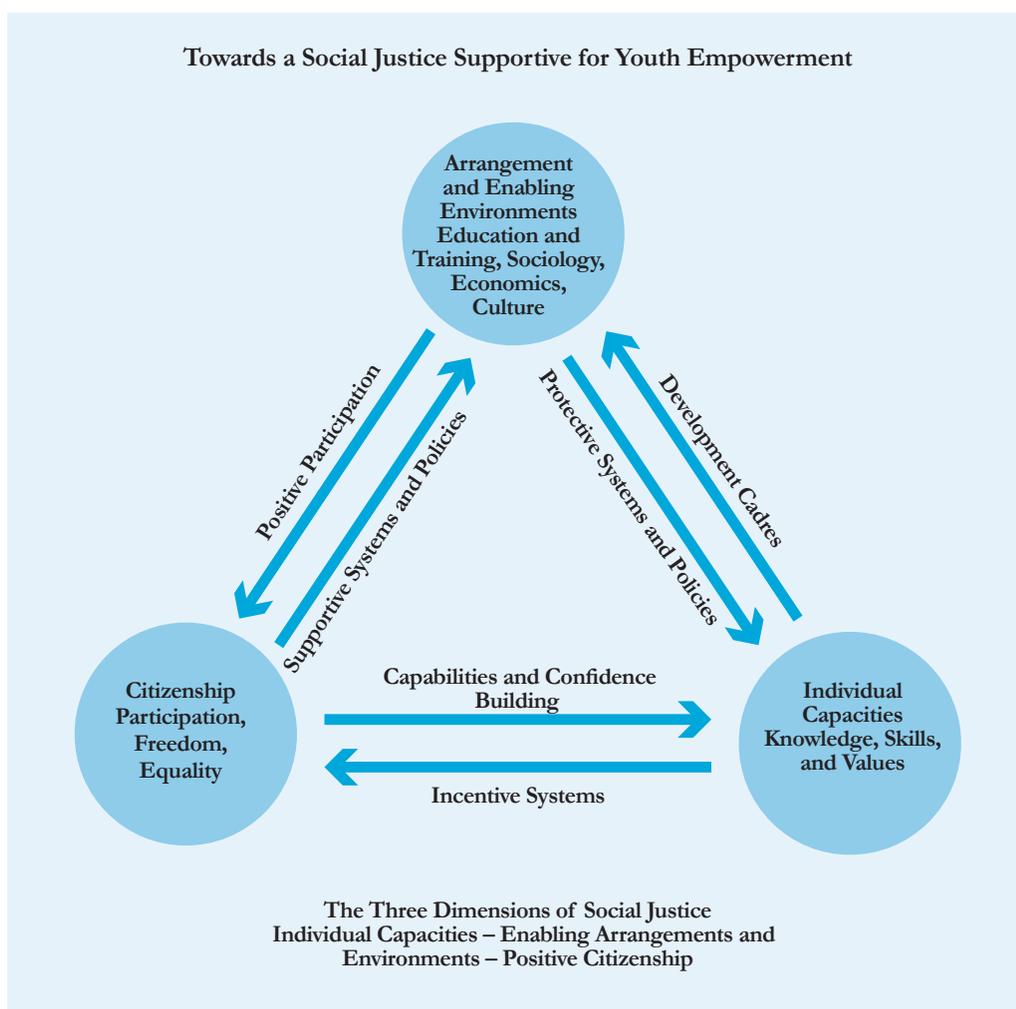
This debate takes us beyond the knowledge base to the necessary condition of social justice. Saying that knowledge economies are the pillar of development and saying that social justice is also a pillar of development means that the two issues are important, complementary, and one cannot be achieved without the other. Knowledge-based development in geographical areas characterised by the “youth bulge” such as the Arab region, does not take place without

qualifying young people and supporting their capabilities, skills and values, as was explained in the previous section. All this cannot succeed unless the pillar of social justice is provided as a prerequisite for national social policies. These policies should support and build the capacities of individuals and expand the opportunities for participation in the various sectors of economy, services, education, health, housing and employment, as well as in welfare and youth development institutions. All of these are environments that require knowledge and social justice for efficient operation, in order to provide individuals and societies with a decent life based on the social integration of young people in the transfer of knowledge and technology; while ensuring at the same time the elimination of exclusion and marginalisation; supporting

Saying that knowledge economies are the pillar of development and saying that social justice is also a pillar of development means that the two issues are important, complementary, and one cannot be achieved without the other

Figure 2.6

The Integration and Enabling of Youth in the Localisation of Knowledge



active citizenship, participation and equality; and elimination of discrimination on the basis of race, religion, sect, social class or regional origin.

This leads the discussion from development to the issue of social justice, from a perspective that adopts the approach of capability and of building the Arab individual's economic and social cognitive effectiveness so that he or she carries out the functional social act that supports the transfer and localisation of knowledge and the building of the knowledge society. Social justice, from this perspective, is an overall concept based on the triad of active human capacities, arrangements and enabling environments and positive citizenship.<sup>71</sup> Figure 2.6 shows the interaction of the three dimensions of social justice (the development of high level capacities, arrangements and enabling environments, and positive citizenship), which form complementary spheres within the process of integrating young people in the localisation of knowledge and the building of knowledge society. The development of capacities, enabling environments and supportive social arrangements represent a framework for building development cadres capable of the transfer and localisation of knowledge, and for building systems that ensure a supportive environment for positive participation as well as freedom and equality. The interaction between the development of capacities (knowledge, skills, and values) and legal contexts that support citizenship establishes confidence-building factors within the culture of the Arab region, as well as factors to establish systems of motivation and increased participation in the acquisition and dissemination of knowledge; positively contributing in the development processes. Moreover, the three pillars in the concept of social justice in this sense are linked to the knowledge pillar, and this correlation between the three dimensions becomes the necessary condition to ensure the integration and empowerment of the youth in the processes of knowledge transfer and localisation.

The human being is the objective, and development is the act of building the

human being, increasing his or her capabilities and expanding participation opportunities. Social justice, according to Amartya Sen's approach as elaborated in his book "The Idea of Justice",<sup>72</sup> is firstly, the development of the capacities of the human individual to perform the work he or she prefers and perform the social functional work to carry out his or her preferences. Secondly, it is the provision of social conditions and social, political and economic contexts through which the individual can achieve his or her abilities and capacities, and then exercise freedom of choice, self-realisation and participation, and social and cognitive effectiveness. Social arrangements are the social policies that guarantee the rights of the individual and the permissibility of the legal implementation of these rights. They also mean the enabling environments and their quality in the provision of such rights (education, health, housing, culture and care). This concept emphasises that achieving justice depends mainly on a deep integration between the individual's efficiency, the social, economic and political arrangements and the quality of related institutions. At the same time, Amartya Sen believes that the structure of social relations in society may expand or narrow down the opportunities to develop individual abilities (skills and personality traits). Hence, he adds that the means and approaches to address the individual, social and economic disparities are the constituent set of specific conditions that form decisions and policies to achieve progress in any community, through empowering youth and developing their capabilities.

Based on the above discussed concepts of development and its relation to knowledge as a main element in realising a nation's path to prosperity, it is necessary to state that development and progress should not be limited to narrow economic perspectives of traditional or capital goods and services, such as growth rates, per capita income and other indicators. Establishing a perspective of the importance of knowledge, in terms of building the knowledge society and the revival of nations, obliges us to observe

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Social justice, from this perspective, is an overall concept based on the triad of active human capacities, arrangements and enabling environments and positive citizenship

development through its ability to expand opportunities for young people and develop the core capabilities that give individuals the freedom to set the conditions favourable for their active participation in building a decent life. Real development enables societies to transform their physical potentials and natural resources through knowledge, innovation and creativity into a developmental base that lays the foundation for enabling environments that respect human rights, reduce poverty, create decent jobs and ensure that social spending is a real investment for the future and an expansion of the opportunities for youth empowerment. In this regard, the Arab Development Challenges Report 2011 noted that “the Arab World” is richer than the outcome of its development. Real development means directing all the efforts in the country towards investing in its citizens and extending them the freedom to choose between available opportunities in enabling environments, building the capacity of the youth to transfer and localise knowledge and employing it in innovation and creativity.

### The Definition of Youth

There are multiple approaches to defining the youth. Youth, as psychologists indicate, is a psychological transitory period in an individual’s life, during which a social passage occurs from childhood to adulthood. During this period, young people face new roles required of them in the next stage, and begin to form a new identity on the basis of the achievement of embodied symbols of integrity, idealism and life continuity. The historical psychology of young people plays a major role, in the sense that the individual interacts throughout the period of his or her formation with the surrounding environment, impacting it and getting influenced by it. Ideologies also play a major role during the formation of a new identity for young people. These processes are affected during the period of formation by life and social institutions that nurture the youth. The family, the school and socialisation institutions play the biggest role in the upbringing of young people,

the guiding of their intellectual and cultural formation and the building of a healthy psychological identity.<sup>73</sup>

The emphasis on the individual’s psychological or social history, or both combined, implies the realisation of the diversity of the characteristics of the youth from one geographical region to another, and from one social class to another, based on the diversity of the effects of social and psychological upbringing. Regardless of the approach adopted in defining the youth and their upbringing experience, there is a general nature or common features that characterise them, by virtue of the social, psychological and biological maturity within this transitional phase. These common characteristics are particularly reflected in the energy, the tendency for leadership, the ability to acquire knowledge and skills, a vision towards the future, the desire to accomplish valuable actions in life, vitality and risk-taking. However, personal autonomy and responsibility draw the line between childhood and adolescence on the one hand and youth on the other. Young people only become fully fledged or mature once they become independent and are able to take personal and social responsibility.<sup>74</sup>

Many definitions of “youth” are based on a quantitative approach of that often involves specific age group. The Nordic Youth Council indicates the youth category to be between 15 and 34 years, whereas the Commonwealth Programme indicates it to be between 15 and 29 years. Meanwhile, the United Nations notes the youth at 15 to 24 years. This last classification has been adopted for statistical reasons, where the statistical data is often made available in age groups defined on the basis of five-year bands. This definition does not imply any bias against other definitions that might be adopted by member countries of the United Nations on the basis of several social, cultural, economic, institutional and political factors. Yet, there is a need to adopt a standard definition to facilitate comparison between countries and within the same country over time.

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Youth, as psychologists indicate, is a psychological transitory period in an individual’s life, during which a social passage occurs from childhood to adulthood

If knowledge is the engine of progress and the source of peoples' wealth in the era of the knowledge society in contemporary global civilisation, then young people are the power entrusted with the transfer, dissemination, localisation and employment of knowledge in new development initiatives

The current Third Arab Knowledge Report identifies the category of young people – which it aims to study in five Arab countries – as those aged between 19 and 29 years of age. This is adopted for practical reasons, given that this group includes young people receiving undergraduate and graduate studies, in addition to those supposed to be well-prepared to contribute to the transfer, dissemination, employment, production and localisation of knowledge. The selection is also justified by the fact that the field study in this report is considered a continuation of the field studies of earlier reports, where the second Arab Knowledge Report 2010/2011 dealt in its field study with the age group under 18 years.

### **The Role of the Youth in Times of Change**

Whatever the case regarding the quantitative indicators or theoretical definitions of the youth and its characteristics, young people across the world are experiencing a crisis, because of the global changes in the context of globalisation. The economic crisis that the world has witnessed over the past few years has had a major impact on young people, and its repercussions continue today. This crisis manifested itself in the increasing rates of unemployment across the world, and in the Arab region in particular.<sup>75</sup> This will be discussed in detail in Chapter 3.

Here, we should emphasise that the Arab region is affected by a specific challenge related to the relative disinterest among its politicians in reaching the aspirations and addressing the concerns of young people in their societies and countries. Globalisation, and its strong trends that have swept the countries of the world, has rivalled these politicians and invaded the minds of the youth with its web of networks and loud voices from every country; voices that include values, trends, information and knowledge that reflect a new and changing world.

### **Youth and Cognitive Development**

If knowledge is the engine of progress and the source of peoples' wealth in the era of

the knowledge society in contemporary global civilisation, then young people are the power entrusted with the transfer, dissemination, localisation and employment of knowledge in new development initiatives. This is a logical relationship and its necessity and importance are emphasised by various studies and international experiences, which highlight the importance of young people. Also highlighted is the importance of transforming this group into an efficient human capital capable of competing in the global community and triggering an economic development integrated with the globalised market, and a quantum leap in the quality of life, culture and knowledge, in order to achieve, eventually, human welfare, dignity and freedom. Young people are the pioneers of creating the future. The future of a society resembles its youth, which calls for devoting more attention towards nurturing and empowering them.

Within this context, there are various options and guidelines related to youth support strategies and programmes. The UNESCO Report (2012) confirmed that investment in young people and their integration in the development process means equipping them with the skills that enable them to cope with the requirements of knowledge transfer and localisation. The most important of these skills are life skills that help young people integrate and devise promising solutions for the challenges of unemployment (such as communication skills, teamwork skills and language skills in reading and writing), and transferable skills (such as problem-solving including critical thinking, creativity, logical thinking and scientific thinking). It also means empowering the youth with knowledge and capabilities in foreign languages, their mother tongues, sciences, mathematics, physical education and arts. In this regard, reports have indicated that young people with skills in mathematics and statistics are more in demand in certain labour markets where industries based on the use of knowledge prefer workers with broad cognitive backgrounds and transferable skills. Young people who perform well and enjoy these qualifications are able to adapt and learn while they work.<sup>76</sup>

## Youth and Enabling Environments

Studies have unanimously agreed on the need to provide the contexts and environments for enabling young people and integrating them into the processes of knowledge transfer and localisation, so that they deservedly become a wealth and a source of wealth. However, these young people will not be able to integrate effectively in life and society unless there are effective cultural and political structures that allow participation and integration, and support the acquisition of various knowledge and skills. Political and social contexts play an important role; the political climate should enable young people to interact with their surrounding social environment and with the labour market and education, while the social and cultural context is what nurtures the public collective consciousness and provides the values and incentives for the acquisition of knowledge and the ability to solve problems.<sup>77</sup> Also, public opinion cannot turn into effective public policy without an enlightened cultural structure based on values and practices that support active participation, engagement and empowerment and drive accountability.

There are significant international experiences and examples to learn from in some developing countries, with regards to how various institutions can support and encourage the preparation of young people to engage in the globalised stock of knowledge, in terms of assimilation, transfer and employment. Many countries have established institutions of youth development. The main role of such institutions is to mobilise the sources of knowledge in innovation, dissemination, implementation and modernisation that relate to developing the youth sector, supporting its effectiveness and developing the necessary policies and operational plans to do so, as well as promoting entrepreneurship. The supervisors of these institutions, in India for example, note that young people play a major role in the development and transfer of knowledge, for they constitute an effective and efficient force in the assimilation, transfer, diffusion and employment of knowledge.<sup>78</sup>

## Concepts of Culture, Values and Citizenship

Without doubt, the status of knowledge cannot be understood in isolation from economic, social and cultural concepts. Therefore, the identification of the cognitive situation of young people calls for greater effort for the sake of a good understanding of their intellectual vision of culture, identity, values and citizenship. They are overlapping conceptual circles and each contributes to the other. Culture and identity define the pattern of “values” and the pattern of “citizenship” with the principles and directions they provide. For example, the political culture, as a part or component of society, determines the status of the citizen through a social contract, reflected in legislations and laws that define the relationship between the state and the citizen in the knowledge society, including the rights, procedures and obligations between all parties. The social contract is a reflection and indicator of a society’s identity, while values are also determined within a specific cultural context.

However, knowledge and its types and patterns are determined by culture, identity, values, the capability of citizens and their preparation pattern. The knowledge that the people of a specific culture and identity seek is an expression of their abilities and skills as citizens and their value orientations. The epistemological dimension in any culture is an essential determinant of the so-called “cosmic vision” that determines the members of a particular culture, through human beings, the universe and life.

Consequently, this section will address the concepts of culture, identity, values and citizenship. These will be also discussed in more detailed in Chapter 3 through the analysis of the status of the Arab youth and their cultural effectiveness.

### Culture

Despite the existence of several definitions of culture in the literature of social sciences, we adopt in this report the concept of

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Culture and identity define the pattern of “values” and the pattern of “citizenship” with the principles and directions they provide

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The culture that supports progress is characterised by the fact that it poses “cognitive models”, whereby people perceive the world around them on the basis of experience, rational, logical and philosophical consistency and enlightened beliefs that open the door to positive change

culture as a system of values, trends and experiences that have accumulated and taken root in a certain society. This system is what is employed by society members in a certain way to establish their world, satisfy their needs and produce the means of this satisfaction. This generates structures, relationships and achievements,<sup>79</sup> as well as the ability of any society to drive progress with its perceptual and cognitive models and incentivising cultural structures towards embracing modernity with the knowledge to build, innovate and create. Alternatively, culture can involve restrictive elements that inhibit progress and support backwardness with obsolete traditions and values that encourage inertia, the anchoring of the past, the unseen and formalism.<sup>80</sup> The culture that supports progress is characterised by the fact that it poses “cognitive models”, whereby people perceive the world around them on the basis of experience, rational, logical and philosophical consistency and enlightened beliefs that open the door to positive change. These cognitive models, which build a favourable view of progress, are the catalyst for creativity, innovation and the production and employment of knowledge to achieve social and economic prosperity.<sup>81</sup> Moreover, the dissemination of scientific culture from one society to another through translation or transfer by scientists, is not possible without a cultural climate that involves “cognitive models” that provide a favourable view of the universe, the world, the human being and life. These models accommodate the scientific method, experimentation and rational philosophy, and support the scientific traditions in the fields of research, development, theoretical thinking and technical practices.<sup>82</sup> Perhaps some of the reasons for the delay in Arab societies lie in the localisation, employment and production of science in the context of an Arab culture that lacks knowledge and cognitive models that reflect “modernity”.<sup>83</sup>

### ***Culture and Science among the Public***

The localisation of knowledge and science is not limited to the establishment of international scientific centres. It is true that science, knowledge, creativity and

innovation are the areas where specialised groups are active in scientific research centres and universities. However, such groups do not live in a vacuum, but rather in a society with a specific cultural context. And unless the community culture allows enhanced dynamic interaction to produce science and knowledge with the public, science and knowledge shall remain deserted. As long as the people’s general culture does not involve perceptual and cognitive models that promote the scientific method, scientific thinking and rationality, the “scientific culture”, in the professional and technical sense, will remain of a secondary marginalised importance in the surrounding societal and communal culture. Society advances with knowledge, science and innovation; and if the culture of the surrounding community gets separated from the culture of specialised scientific groups therein, scientists will be isolated and innovation and progress would break down, because this gap does not only deprive scientists of the supportive culture, but rather constitutes a force resisting their work, thinking patterns and perception of the world, universe and life. Such a gap also deprives society of the scientific outputs and by-products, while also stifling the practices of scientific and rational thinking.

Scientific discoveries, technological inventions, innovations and creativities in developed societies pass from the specialised scientific groups to the lay citizen depending on the recipient’s cultural responses, so that they are completely reflected in the structure of the general culture of the society as a whole.<sup>84</sup> If the society’s culture is not favourable to such a response, the efforts of scientists face resistance. Therefore, the extent of the penetration of science in society demonstrates the readiness of the general culture to contain the activities of science, and even to support these activities and employ their outputs. The transfer and localisation of knowledge requires public policies to develop a specialised scientific culture and transfer it to the society, the public and the lay citizen.<sup>85</sup> The facilitation of the transfer of knowledge to the lay citizen is usually conducted through the so-called

“scientific culture membrane” or, in other words, through building a scientific vision or a scientific enlightenment that settles in the general culture of the society, so that it represents a cultural trend through which scientific concepts, knowledge products, creativities and innovations are transferred to the public. Therefore, cognitive, cultural and social models that support science and scientists are consolidated.<sup>86</sup>

The daily life of the public in any advanced society is based on the employment of scientific laws, rules, theories, data and information produced by scientists. Therefore, we note the increased focus of studies and research on the vital question: to what extent has science become general merchandise in society? One study deals with the extent of the penetration of scientific discussions in the culture space of society and the extent of the society’s interest in discussing issues and discoveries. These include biotechnology, the link between science and technology, the assisted reproductive technology, immunodeficiency diseases, gender selection, the huge advancement in IT and its use in R&D, changes in the environment, pollution problems, food and public health. The scientific gap between the culture of specialised scientists and that of the public will cause a crisis in the path of scientific progress, which prevents the localisation and use of knowledge. In this context, the mentioned study confirms that the ignorance of the public leads to its members being armed with superstitious and obsolete beliefs about the universe, the human being, life and the world; myths, legends and non-scientific thinking, all of which are obstacles to progress.<sup>87</sup> One question arises at this point: has scientific progress led to public social scientific dialogue in the general culture of the Arab society?

### Values

According to Grondona, values are defined as the sub-element in the symbolic layout of the individual or group of individuals, operating as a criterion for the selection of the rule or act among alternatives of

variables in different life situations.<sup>88</sup> In this sense, values serve as guides to the individual or the group and its function(s), including cognitive, emotional and orientation aspects.<sup>89</sup> Values are the sub-elements in the general culture of society and they influence its development. Religion and human morals are among the main sources of values in any society, institution or social organisation. In organisations, values play an important role in shaping performance, the direction of its leadership, the quality of its performance and the outputs of its activities.

According to this concept, the quest to build the knowledge society and values of modernity requires a value system that encourages diligence and the acquisition of science and knowledge, disseminates the culture of tolerance, love and justice, and directs efforts towards improving the society and developing it, localising knowledge and employing it in order to progress, while building the knowledge society on the basis of democracy and knowledge. To what extent is the Arab culture favourable and supportive of science? And are government and forces of change in the Arab world interested in building “scientific enlightenment” programmes among the masses to equip citizens, especially young people, with science, the scientific method and rationality required for the transfer and localisation of knowledge in the knowledge society? Does the Arab world enjoy scientific standards to measure the trends of the general public in a society or the extent of the public understanding of science and technology? Do Arab societies measure the “scientific awareness” or the social trends towards experimentation and rational thinking, as we are seeing in the developed countries that are keen on knowledge production, innovation and creativity? This is what we will try to answer in the following chapter.

### Citizenship

Culture and identity are two intertwined concepts. If culture, in our previous definition, is the system of values, trends and experiences available to a certain

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Religion and human morals are among the main sources of values in any society, institution or social organisation

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The Arab region, with the youth wealth it enjoys, is at a historic international crossroads where knowledge is emerging as a fast-growing force that forms the world around it with rapidly advancing technology and sciences erupting in all aspects of social life, economy, services, education and health

society, through which the world sees this society and deals with it, then identity is the general features that characterise a particular society within specific historical temporal and spatial circumstances. The identity of a society is determined by a variety of self and external characteristics in specific historical circumstances. Self-characteristics are natural geographic, demographic and cognitive characteristics. External characteristics are represented in culture, political systems, religion and social and family structures.

The characteristics of identity are not fixed attributes, they are conditioned to historical circumstances. Whether they are self or external characteristics, identity elements are in continuous change. The development of identity is a system of advanced processes. Political tyranny contributes to the consolidation of rigid cultural values based on illusion, myth and superstition, and to the production of a closed identity.

Citizenship is a concept that overlaps with the two previous concepts (i.e. culture and identity). It is one of the basic concepts in the process of modernising any society and a central element in the issue of cultural renewal and the development of identity to advance society and access the knowledge era. This concept emphasises the legal relationship between the individual and the country, which includes obligations, rights and duties as set by legal and judicial procedures. If the concept of citizenship conforms on one of its dimensions the legal relationship of the individual and the country, it emphasises on another dimension the link between citizenship and culture and the values of individuals and their perceptions of themselves, the different other and the meanings of the universe, life and human beings. Therefore, the discussion of the situation of young people, children and the family within the context of the citizenship concept acquires additional wide dimensions.

From here, the concept of citizenship gains central importance in social sciences and involves questions related to culture, social and political values, governing laws, enacted

procedures, and the discussion of the issues of deprivation, poverty, marginalisation and social exclusion.

### **From Concepts to an Analytical Model for the Situation of the Youth in the Transfer and Localisation of Knowledge**

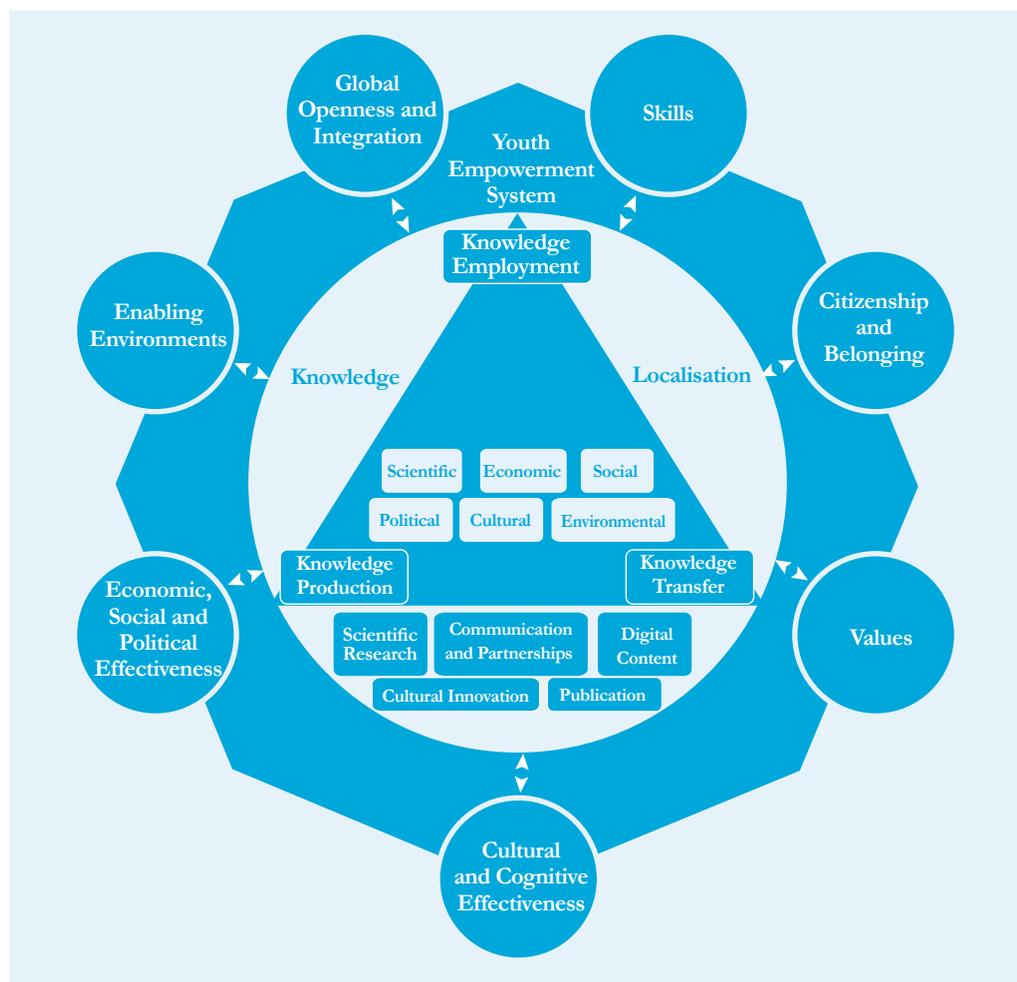
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The Arab region, with the youth wealth it enjoys, is at a historic international crossroads where knowledge is emerging as a fast-growing force that forms the world around it with rapidly advancing technology and sciences erupting in all aspects of social life, economy, services, education and health. This international progress is reflected in the emergence of a new human civilisation based on knowledge, private and public skills, life skills, creativity, innovation and creative critical thinking. In order to join the global civilisation and develop the capacity to contribute to the building of this civilisation and global competitiveness, Arab countries have to invest in this youth bulge and convert it into human capital that is cognitively, culturally, politically, economically and socially effective, and able to acquire knowledge and localise it.

This chapter has provided a set of basic concepts directly related to the central issue in this report, which is “the integration of the youth in the process of the transfer and localisation of knowledge.” It has attempted to clarify the concept of knowledge and the concepts associated with it (knowledge society, knowledge economy, knowledge transfer and its mechanisms), and discusses the concept of development and its relationship with knowledge, while presenting a vision that goes beyond the narrow concept of the knowledge economy, towards a comprehensive vision of development that expands the capacities, choices and freedoms of human beings. This chapter also explained the characteristics of the youth cluster in the age of knowledge, and its importance in the Arab region. It highlighted the role of this cluster in achieving progress and the need to enable it multi-dimensionally, while taking into account cognitive features, the system

Figure 2.7

**The Conceptual Framework for the System of Knowledge Localisation and That of Enabling the Youth**



The financial and youth capital that characterise the Arab region, as well as the knowledge and technology revolution sweeping through the developed world around us, calls for further emphasis on the availability of a potential opportunity to achieve an Arab breakthrough towards the effective integration in the world civilisation and the achievement of progress and welfare for the Arab people

of values and the style of culture, identity and enabling environments, on the basis of social justice and the achievement of active citizenship.

The financial and youth capital that characterise the Arab region, as well as the knowledge and technology revolution sweeping through the developed world around us, calls for further emphasis on the availability of a potential opportunity to achieve an Arab breakthrough towards the effective integration in the world civilisation and the achievement of progress and welfare for the Arab people. However, this remains dependent on the ability of Arab countries to rehabilitate their young people and transform the youth bulge from a problem and a challenge into a human capital and a cognitive asset in building knowledge

economies, fostering participation in global civilisation, and contributing in steering the course of development towards a human society blessed with prosperity, justice and peace.

In light of the above, the process of preparing the human capital to effectively integrate in the process of the transfer and localisation of knowledge in the Arab region is not a simple one, but rather a complex process with interlocking elements that can be portrayed through the following illustrative diagram (Figure 2.7).

Based on the earlier discussion of problems and challenges in Chapter 1 and the above clarification of the concepts in Chapter II, the process of the empowerment of young people towards realising their

increased assimilation in the processes of knowledge transfer and localisation requires equipping them with the knowledge, skills and values necessary to ensure their cognitive, cultural, economic and social effectiveness. The enabling environments involve the education and health systems, the technological infrastructure, research institutions, innovation knowledge management systems, and the labour environments that enable young people to develop and employ capacities for increasing the levels of knowledge production and economic productivity. The empowerment of the youth and the activation of their role also require laying the foundations of social

justice to ensure the right to education, work and wealth for all, as well as bringing about cultural development supportive of knowledge, which embraces the principles of active citizenship and achieves a balance between the youth's sense of belonging and loyalty to their homelands and their capacity for openness and global integration.

At the end of this presentation, the questions remain: what is the status of the Arab region with regards to the various components of this model? Where are its successes evident and where has it failed? This is what the following chapters will explore.

## ENDNOTES

- 1 Korres 2008 and Brinkley 2006.
- 2 Roberts 2009.
- 3 We will use in this report the term “tacit knowledge” instead of “implicit knowledge,” because the word tacit refers to the meaning wanted when knowledge is present in the individual’s mind, behaviour and thoughts.
- 4 Dancy & Sosa 1992 and Viale 2006.
- 5 Chomsky 1986.
- 6 Kuhn 1970.
- 7 Viale 2006.
- 8 Mowery & Rosenberg 1989.
- 9 Li-Hua 2006.
- 10 For more information on the history and emergence of the knowledge society, refer to the Arab Knowledge Report 2010/2011 (UNDP and Mohammed bin Rashid Al Maktoum Foundation 2012). (Reference in Arabic)
- 11 Powell & Snellman 2004 & Sellens 2009.
- 12 For more information, refer to the Arab Knowledge Report 2010/2011 (UNDP and Mohammed bin Rashid Al Maktoum Foundation 2012). (Reference in Arabic)
- 13 Hotaran & Zamfir 2011.
- 14 Hotaran & Zamfir 2011.
- 15 Drucker 1998.
- 16 Roberts 2009.
- 17 Bercovitz & Feldman 2006, Gaillard 2010, Banya 2005, Roberts 2009, Howlett & Morgan 2011, & Donn & Manthri 2010.
- 18 There is a translation of the word ‘paradigm’ in the sense of specimen or model in some cases. Some translate it as “arrangement”. Our opinion is to find an Arabic term for this term, because the idiomatic meaning used in Thomas Kuhn’s book (Structure of Global Revolutions) goes beyond this meaning. Here “Pradigm” is a comprehensive vision over the universe, the human being and life as adopted by a group of scientists and that determines their attitudes to life, education and knowledge.
- 19 Sellens 2009.
- 20 Roberts 2009.
- 21 Arab Planning Institute 2012. (Reference in Arabic)
- 22 Azarmi & Al Rubaie 2010.
- 23 Gaillard 2010.
- 24 Roberts 2009.
- 25 UNESCO 2012. (Reference in Arabic)
- 26 UNESCO 2012. (Reference in Arabic)
- 27 Azarmi & Al Rubaie 2010.
- 28 Shiva 2007.
- 29 Roberts 2009.
- 30 Sherif Delaware 2012. (Reference in Arabic)
- 31 World Bank 1998/1999. (Reference in Arabic)
- 32 Brinkley 2008.
- 33 Brinkley 2006.
- 34 Brown et al. 2008.
- 35 Brown et al. 2008.
- 36 Sandhawalía & Dalcher 2011.
- 37 Sandhawalía & Dalcher 2011.
- 38 Psarras 2006.
- 39 Hicks et al. 2006.
- 40 Mohamed et al. 2008.
- 41 Albino et al. 2004.
- 42 Psarras 2006.
- 43 Lundvall 2004.
- 44 Oylavan-Oyeyinka 2005.
- 45 Oylavan-Oyeyinka 2005.
- 46 Sharma et al. 2009.
- 47 Levine & Gilbert 1998 and Albino et al. 2004.
- 48 Abott 1985.
- 49 Samia Satti Nour, background paper for the report.
- 50 Cowan et al. 2001.
- 51 See also Bsaiso 2012 & Samia Satti Nour, background paper for the report.
- 52 Kneller et al. 2010 and Markusen 2002 and Caves 1974.
- 53 Roberts 2009.
- 54 Mahroum 2002, and Fornahl et al. 2005.
- 55 Mahroum 2001.
- 56 European Commission 2000.
- 57 Williams 2009.
- 58 Albino et al. 2004.
- 59 Albino et al. 2004.
- 60 Friedman 2006.
- 61 Fiegenbaum 2007.
- 62 Li-Hua 2006.
- 63 For more articles on globalisation, see: Al-Sayyid Yassin 2000. See also: Fiegenbaum 2007, Banya, 2005, Lopez Segreña 2012, Carnoy 2005, Allen et al. 2012, & Kamens 2012.
- 64 Review on the formation of the forces behind globalisation, its dynamics, effects, sources of power, and dominance and their positive and negative effects on politics, culture, and economy, in the following sources: Banya 2005, Donn & Al-Manthari 2010, Hoogvelt 2001, Marais 1997, Margison & Van der Wende 2005.
- 65 Roberts 2009.
- 66 Al Sayed Yassin Al Sayed 2000.
- 67 Donn & Al Manthri 2010.
- 68 Refer to Chapter IV.
- 69 Sen 2004.
- 70 Arab Knowledge Report 2010/2011, UNDP and Mohammed bin Rashid Al Maktoum Foundation 2012. (Reference in Arabic)
- 71 See Hasan al-Bilawi 2013. (Reference in Arabic)
- 72 Sen 2009.
- 73 Erikson 1968.
- 74 Kamal Naguib, background paper for the report.
- 75 ILO 2013.
- 76 UNESCO 2012 (Reference in Arabic), and World Bank 2010.
- 77 Affi 2011.
- 78 Kumar 2009.
- 79 Mahmoud Qambar 1989. (Reference in Arabic)
- 80 Arab Knowledge Report 2010/2011, UNDP and Mohammed bin Rashid Al Maktoum Foundation 2012. (Reference in Arabic)
- 81 Mahmoud Qambar 1989. (Reference in Arabic)
- 82 UNDP 2006.
- 83 Arab Knowledge Report 2010/2011, UNDP and Mohammed bin Rashid Al Maktoum Foundation 2012. (Reference in Arabic)
- 84 Raza 2009.
- 85 Murad Wehbe 1980. (Reference in Arabic)
- 86 Raza 2009.
- 87 Callon 1999.
- 88 Grondona 2000.
- 89 Haskell et al. 2012.