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EXECUTIVE SUMMARY

RTI International and Bayti Real Estate Investment Company developed an economic growth strategy for the first Palestinian planned community—Rawabi. This strategy builds off technology-led economic development models to make Rawabi a job creation center that also strengthens the West Bank’s economy. It seeks to increase economic opportunity by introducing new technologies, engaging international firms, and expanding current Palestinian economic activities.

The strategy outlines ways Rawabi can harness innovation assets—two nearby universities and the highly educated workforce—to build a stronger knowledge ecosystem and to strengthen the Information Communication Technology (ICT) industry as an economic base from which Rawabi can attract and retain businesses. Virtual employment is discussed as a means to jump-start this activity under the current geopolitical circumstances in the West Bank.

This integrated strategy combines technology, innovation, and a viable market-based approach with a strong vision, political will, and moral commitment to propel greater economic stability.

I. INTRODUCTION

While the West Bank could be thought of as an unlikely place for innovation and knowledge ecosystems to take hold, Rawabi’s developers seek to harness its unique and underutilized innovation and knowledge economy assets to build a better future. This overarching goal is similar to that of all science and technology parks, regardless of where they are located. As this paper will demonstrate, science and technology hubs in unstable regions have similar characteristics in terms of the assets needed to flourish and the larger goals they hope to attain. The model diverges in unstable regions where there are likely greater challenges *and* opportunities for creating particular strategies to overcome the destabilizing factors. For public sector management, the environment may present opportunities for innovative and more efficient governance structures or lead to heightened and complicated government constraints. For Rawabi, this is yet to be determined since it is not projected for completion until 2013.

This report will first describe Rawabi, its location, current constraints, and vision for the future. This is followed by a summary market analysis that outlines the gaps that decision makers will need to bridge in order to build a successful knowledge ecosystem. Next, particular initiatives are described that will lay the groundwork to address these gaps and build a technology-based job creation hub. Finally, the paper concludes with observations and key points for consideration in governance for creating knowledge ecosystems in unstable regions. Throughout the report, the approach to building knowledge ecosystems in the West Bank is addressed in terms of where it diverges, or not, from building similar ecosystems in more stable regions.

II. ABOUT RAWABI

Rawabi, a real estate project, is the first Palestinian planned community located between Ramallah and Nablus. It is being developed by Bayti - a joint venture between Massar International and Qatari Diar Real Estate Investment Company - and is designed to attract Palestinians seeking affordable housing in a well-zoned, accessible environment. It will offer a

quality of life option well within the financial reach of young families as well as Palestine’s rapidly growing class of single male and female working professionals.

The town will include more than 5,000 residential units, eventually housing up to 40,000 residents upon completion in 2013. Rawabi’s commercial center will feature office and retail space, a shopping center, primary and secondary health care facilities, hotels, a library, a movie theatre, and public parks. In addition, the town center will provide numerous public services, including schools, municipal government offices, a police station and a fire station.

Rawabi aims to offer affordable housing, create an integrated community, and build an innovation and knowledge ecosystem in an unstable region. Through a public-private partnership, the Rawabi Growth Strategy developed for Rawabi seeks to have immediate as well as long-term, sustainable economic and social benefits for the greater Ramallah area in which it is located, as well as the wider Palestinian economy and community.

Location

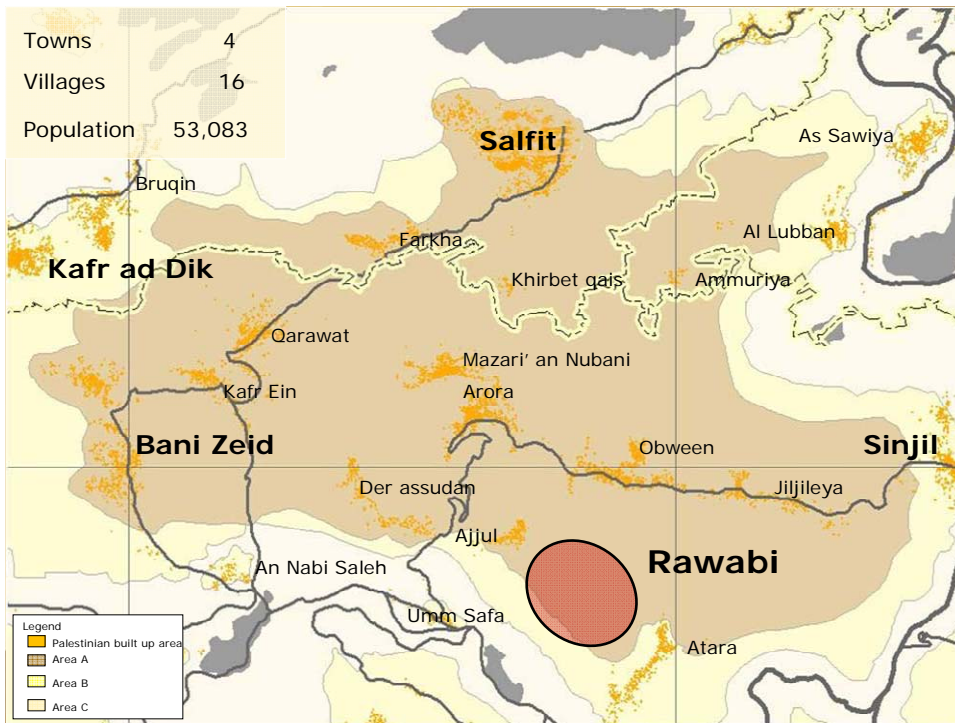
Rawabi is located within the Greater Ramallah area, Palestine’s government and services center. Ramallah’s population grows daily as upwardly mobile Palestinians come to the city for job opportunities and relative freedom from the divisions and movement complications so prevalent elsewhere in the West Bank.

Exhibit 1: Rawabi’s Location in Relation to other Major Metropolitan areas



Source: Bayti Real Estate Investment Company

Exhibit 2: Rawabi's Location in Relation to Local Towns



Source: Bayti Real Estate Investment Company

Greater Ramallah sits at the center of a geographical area with 11 internationally accredited universities that produce a healthy supply annually of science and engineering graduates in a marketplace said to have a relatively low absorption capacity requiring that skill. New companies are springing up to take advantage of this high quality, relatively cost-efficient technical workforce in order to offer a range of back-office services¹ for large technology-related firms in the region. The impetus for Rawabi's initial economic growth is likely to come from this ICT workforce.

Bir Zeit University, with its programs in electrical engineering and ICT, sits 6 kilometers outside of Ramallah and just 3.5 kilometers from the Rawabi site. An-Najah National University in Nablus, with its faculties of medicine, pharmacy, optometry, and nursing as well as its Energy Research Center, is nearby. Other universities also will offer the opportunity for advanced skills training for the workforce, contributions from university-based researchers, and product development networking with private entrepreneurs.

Geopolitical Constraints

Although Rawabi has many of the core components of a global innovation ecosystem, it is also evolving under a set of geopolitical constraints that bring unique challenges for technology-led economic development that are more characteristic of unstable regions. As the recent conflict in Gaza indicates, the West Bank is in a conflict-prone area causing longstanding and unpredictable conditions that impact to varying degrees business activity and daily life. Relative to building a

¹ Defined as business process outsourcing (contracting out individual administrative functions such as data entry, claims processing, and delivering entire systems of administrative services)

future knowledge ecosystem, three fundamental constraints emerge for Rawabi as a hub for technology jobs in an unstable region that diverge from typical circumstances in more stable regions. They are: issues of movement, politics, and Israeli control.

1. Movement

The flow of goods and services can be limited due to the numerous checkpoints and restrictions placed on people coming to and leaving the West Bank. This not only has the potential to affect markets but also the flow of talented researchers or professionals to innovation centers such as universities and research hospitals, for example.

2. Politics

As with all regions, the private sector makes location and investment decisions based somewhat on the predictability of the government's laws, rules, and regulations. The unpredictable nature of local and regional politics makes the West Bank a more challenging location to attract innovation resources such as research and development (R&D) investment or other foreign direct investment.

3. Israeli Control

Most forms of infrastructure, including water, power, and Internet connectivity, are controlled by the Israeli government, which adds to the unpredictability for business operations.

These constraints, which are discussed in more detail in Section III, are certainly atypical for most places building a knowledge ecosystem, yet given the strength of Rawabi's underutilized innovation assets and the carefully thought through strategy that works within the constraints, Rawabi can develop an innovation ecosystem through its tailored model for technology-led economic development. By combining its university and workforce strengths with strategies that take advantage of international goodwill and virtual business opportunities, Rawabi's knowledge ecosystem can be accelerated.

III. MARKET ANALYSIS

Despite the constraints of an unstable region, the growth strategy followed the same assessment guidelines as used in most strategic planning for technology-led economic development. It is market-based and comprehensive in terms of conducting a supply and demand analysis of Rawabi's economy and innovation resources. The strategy recognizes not only specific global market demands that afford opportunities but also requirements that Rawabi must meet to succeed. Similar to all assessments, it describes the supply and demand analysis in the context of the local reality "on the ground." Of course, findings from this analysis informed both Rawabi's unique competitive advantage along with its particular constraints. This helped determine how the technology-led model must be tailored for Rawabi's more unstable conditions to ensure success.

On the supply side, similar to stable regions, the greater Ramallah area has competitive advantages that can be exploited immediately plus features that could be encouraged and exploited to develop an economy based on products and services for a global market. However, there are also serious constraints that arise due to the conflict prone characteristics of the area

that in some cases will affect the near-term choices of economic investments, and in other cases must be overcome before participants in the global economy can be attracted.

Demand-Side Analysis: Aiming Rawabi's Economic Strategy at Global Trends

Three interlocking driving forces are changing the rules of business and economic competitiveness for all regions:

1. **Globalization** - Markets and products are more global; goods and services increasingly contain inputs from more than one country or region.
2. **Information/Knowledge Intensity** - Increasingly, the measure of the value of goods and services sold in the marketplace is determined by the knowledge capital required to produce them. A majority of workers in developed economies are information workers of some kind.
3. **Connectivity** - Increasingly the flow of data and information is more important than the movement of labor or the flow of physical goods.

As a result, goods and services can be developed, bought, sold, and in many cases even delivered over worldwide electronic networks. The West Bank is experiencing these global trends to some degree. Production and export of knowledge economy products from the West Bank—although still small—have risen steadily and substantially in recent years, bringing with them significant wage increases and substantially higher labor productivity rates.

The economic growth strategy for Rawabi focuses on sectors in which the goods and services produced flow more over electronic information networks than via road, railroad, ocean, or air transport. Knowledge-enhanced products or services can command price premiums over comparable products with low embedded knowledge or knowledge intensity. Unlike most resources that deplete when used, information and knowledge can be shared, and actually grow through application.

The effect of location is *diminished* in some economic activities—that is, using appropriate technology and methods, virtual marketplaces, and virtual organizations that offer benefits of speed, agility, round-the-clock operation, and global reach can be created. In fact, location effects are *reinforced* in some other economic fields, by the creation of business clusters around centers of knowledge, such as universities and research centers.

Supply-Side Analysis: Exploiting Current Local Economy Features

The local economy within which Rawabi will be built has features that can be exploited in the near term, and further developed in the medium term. In brief, the features to build upon include a well-educated population; the overall attractiveness of the Ramallah area to young, well-educated Palestinians; and the presence of major universities that are contributing the educated workforce and have the potential to provide R&D services to firms that locate in Rawabi. These elements are invaluable assets from which Rawabi can accelerate its knowledge ecosystem.

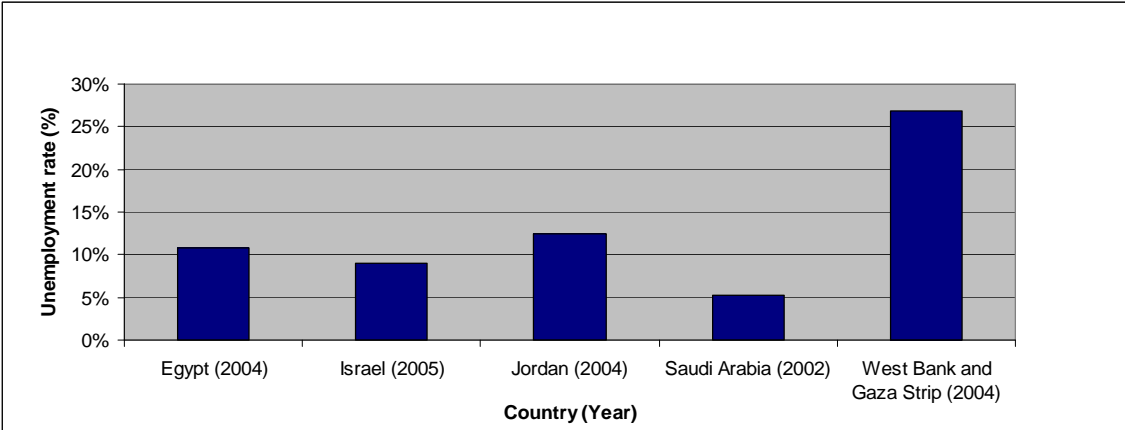
A socio-economic analysis was conducted to provide a context for strategic direction.² There are four key findings that describe supply-side features of the local market that can be exploited.

Finding #1: The labor force in the West Bank is highly educated, with strengths in science and engineering and proficiency in multiple languages, yet underemployment and unemployment are high.

The West Bank’s population grew at an average rate of 3.2% between 2001 and 2006.³ Within this population, between 1995 and 2006, the percentage of people age 15 and older with bachelor’s degrees and higher steadily increased (from 5.4% in 1995 to 8.6% in 2006).⁴ Common specializations within the available BA degrees are science and engineering (22%), commercial and business administration (17%), and social and behavioral science (15%).

At the same time the population has become more educated, job opportunities have remained thin. The unemployment rate is at least double and close to triple that of neighboring countries (Exhibit 3).

Exhibit 3: Unemployment and Underemployment Rates for Selected Countries in the Middle East and North Africa (various years)



Source: International Labour Organization, United Nations

Of even more concern is the gradual increase in underemployment since the second *intifada*⁵ in 2001. As Exhibit 4 shows, close to 10% of the population is not working to its full capacity. Palestinian Central Bureau of Statistics (PCBS) data also show that since 2004, Palestinians have earned a higher average income working for the public sector than for the private sector, which is the reverse of the usual pattern worldwide and an indication of the lack of opportunity to work to potential in the private sector.

² A methodology was based on a three-part analysis: review of past research; quantitative analysis; and qualitative analysis. It should be noted that availability of data, particularly for comparing multiyear trends and projections for the Palestinian Territory to the Middle East and North Africa (MENA) countries, is inconsistent and thus weakens the full analysis.

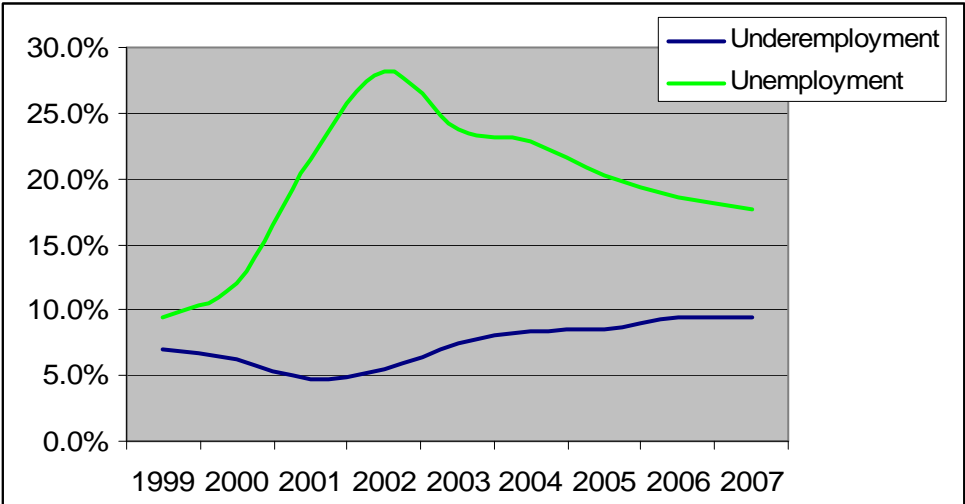
³ Source: Palestinian Central Bureau of Statistics (PCBS), *Population Projections 2001–2006*.

⁴ Ibid.

⁵ The Second Intifada is defined generally as period of intensified conflict between Israelis and Palestinians beginning in September 2000 and ending in 2005.

Interviewees elaborated on the quality of the workforce, citing that many Palestinians speak multiple languages (Arabic, English, and some French) and that it is a dominant trend for science and engineering graduates from Bir Zeit and An-Najah universities to be recruited primarily to the Gulf region before they have even graduated or been interviewed in person for positions.⁶ Brain drain is consistently mentioned as a concern for the Palestinian labor market.

Exhibit 4: Unemployment and Underemployment Rates, West Bank, 1999-2007



Source: Palestinian Central Bureau of Statistics

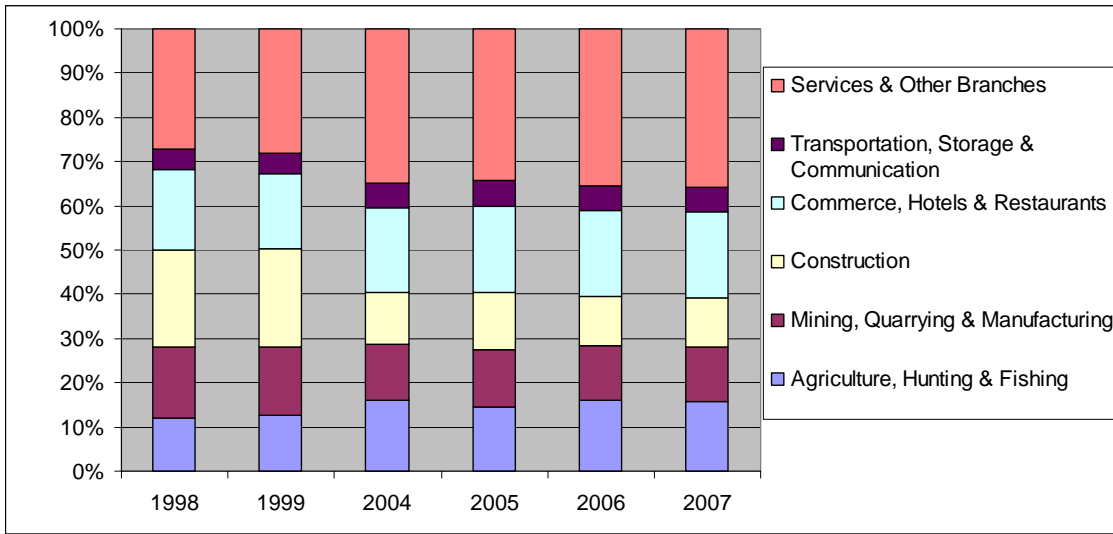
Finding # 2: Two economic subsectors—ICT and ICT-enabled—emerged as most competitive for Rawabi in the short term.

The ICT and ICT-enabled subsectors (i.e., companies that deliver services over an ICT infrastructure) are primary targets to build Rawabi’s economy and serve as a foundation for job creation. ICT has the most potential in this area, while ICT-enabled companies need to be nurtured more in order to demonstrate local success to the international market.

Because only limited data were available on ICT and ICT-enabled services, changes in the overall service sector were used as a proxy to gauge economic potential. The “service sector” is loosely defined by the PCBS and is not restricted to ICT and ICT-enabled businesses; however, it does serve as the current best source for estimating employment trends within this area. As Exhibit 5 indicates, employment in services and other branches has grown steadily over time, while in the other sectors it has remained relatively flat or has shrunk, with the slight exception of agriculture, hunting, and fishing, which has grown slightly. It is also notable that the service sector accounted for over 30% of employment in 2007—the largest of the six sectors identified in Exhibit 5.

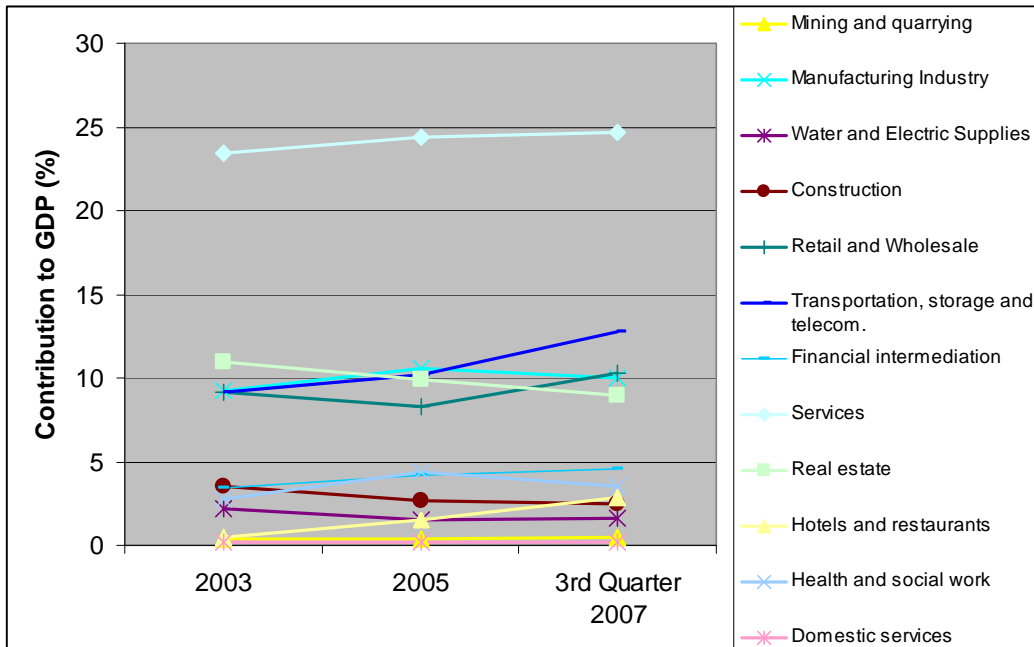
⁶ Mostly males are recruited out of the country while women often remain underemployed or unemployed in Palestine.

Exhibit 5: Distribution of Employment by Economic Activity in the Palestinian Territory, 1998-2007



Source: Palestinian Central Bureau of Statistics, Labour Force Survey, 2008

Exhibit 6: Economic Activity Contribution to Gross Domestic Product (GDP), West Bank and Gaza Strip, 2003-2007⁷



Source: Palestinian Central Bureau of Statistics, National Accounts, 2008

Services are also the highest contributor to GDP by a significant margin, as Exhibit 6 illustrates. In the third quarter of 2007, the GDP contribution was close to 25%, or more than twice as much as the next highest group: transportation, storage, and telecommunications. Finally, the ICT

⁷ Figures are in constant prices based in 1997.

sector is well established in Palestine with a noted concentration in Ramallah and its neighboring Al-Bireh municipality. In fact, ICT holds the most promise of the economic sectors analyzed for job creation and economic growth, given its existing cluster of activity in the West Bank.

Overall, this economic sector is relatively well supported by such organizations as the Palestinian Information and Communications Technology Incubator (PICTI) and the Palestine Information Technology Association of companies (PITA), but a national champion to lead ICT services growth is lacking, which could hamper development for ICT in the long term.

Finding #3: Over the long term, pharmaceuticals, healthcare, and green industries⁸ hold promise for research and new business opportunity.

In pharmaceuticals, there are possibilities for Rawabi to do low-cost genomic analysis and to focus on generic pharmaceuticals.

- Genomic analysis is an important tool for drug discovery as well as for other life science research. Data generation and analysis in genomics can be done remotely with appropriate information technology (IT) infrastructure.
- Research, production, and sales of generics represent a growing market globally, with concentrated expansion in the Middle East, Eastern European, and African markets. This should be considered a long-term option for Rawabi to pursue.

The healthcare sector is one that employs many people; when it is combined with nearby research facilities, innovative market research can result. The growth strategy would take advantage of Rawabi's planned new healthcare clinics and hospitals by incorporating technology features, such as electronic patient records systems, that also can become a focus of Palestinian-based R&D activities. At the outset, there may be potential for Rawabi to provide specialized quality care to better meet local demand and reduce the number of Palestinians seeking treatment outside the territories, mainly in Israel, Jordan and Egypt. Seeking health care abroad is both costly and time consuming due to travel expenses, accommodation costs, lack coverage by the Ministry of Health, and the travel permit application process for Israel for example. For these reasons, there is a market potential for specialized health care in the West Bank that could significantly reduce per capita health care costs for Palestinians while simultaneously increasing expenditures for local services. Because of the absence of a legacy system to contend with, Rawabi would be able to move directly into state-of-the-art healthcare tracking systems and thereby showcase the adoption of improved IT systems in healthcare facilities.

Rawabi is seeking to incorporate green building and energy-efficient systems as it is constructed in order to ensure environmental sustainability and preservation. Waste water collection systems, water re-usage, recycling strategies, solid waste collection, and energy preservation initiatives will all be incorporated into Rawabi's complex physical infrastructure. Rawabi's vision is to be a prototype for the first Palestinian green city and ultimately to guarantee a higher quality of life for present and future generations. Ways to take advantage of green technology are training and grassroots activities among Rawabians to promote the environmental and public health of Rawabi, as well as to build training, research, and small company expertise into the construction

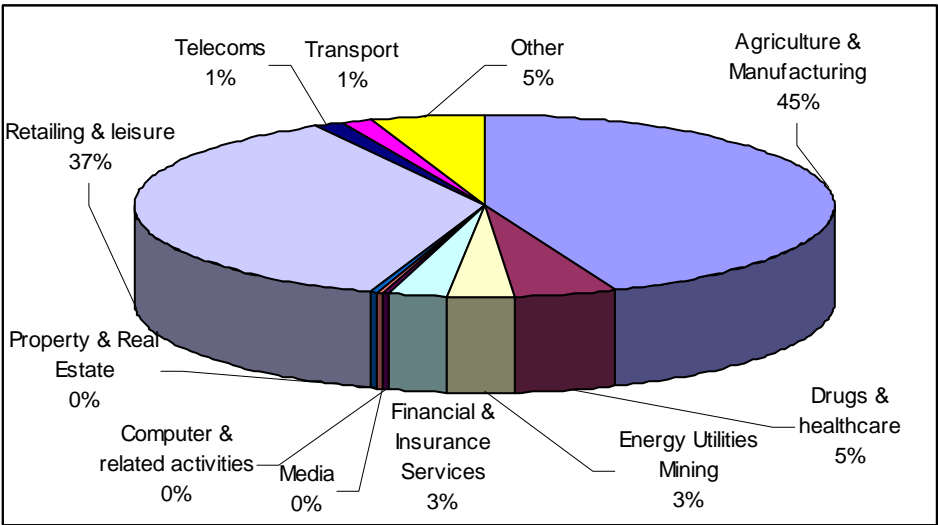
⁸ Green industries in this strategy means green building products and alternative energy systems.

of the community itself. Potential new areas of focus include integrated photovoltaic (PV) roof panels and smart control systems, water management, and recycling.

Finding #4: Agriculture and manufacturing remain an important part of the Palestinian economy.

According to PCBS data, over 42% of employment in 2006 (see Exhibit 7) was within the agriculture and manufacturing sector,⁹ signifying that this sector remains an important base for the economy of the West Bank and Gaza Strip. The key subsectors responsible for this employment were the stone and marble, apparel, and food and beverage industries.

Exhibit 7: Percent Employment by Economic Activity for West Bank and Gaza Strip, 2006¹⁰



Source: PCBS, Industry Survey Data, 2006

It will be important for Rawabi to recognize and incorporate agriculture and manufacturing into its economic growth strategy—for two reasons. First, it employs almost half of Palestinians, providing an important base of activity from which to build. Second, these figures demonstrate that agriculture and manufacturing are integral to Palestinian culture. Folding elements of this sector into the growth strategy will allow the concept of Rawabi to resonate with the Palestinian people, thus ensuring a more holistic approach and more diversified economic opportunities. However, as is discussed in the following section detailing key constraints, new and enhanced opportunities in this sector are not likely to be viable until the medium to long term, as constraints are overcome.

Constraints and Issues that Must Be Resolved to Link Local Market Features to Global Demand

Although the local economy has positive features that can be matched with global market demands, the political setting and local economy also constrain some of the choices that can be made, at least in the short term. It is with these constraints that the model of Rawabi's

⁹ Agriculture data are based on 2003 numbers from PCBS. Manufacturing data are from 2006.

¹⁰ Agriculture data are based on 2003 figures.

knowledge and innovation ecosystem diverges considerably from most science and technology-based hubs for development. The current political context and associated restrictions, such as movement of people and goods, limit some kinds of otherwise attractive economic activity, at least in the near term. These constraints are so distinctive and fundamental to living and working in the West Bank, that it dictates a strategy for Rawabi to initially avoid the constraints and then gradually work with them to minimize or eliminate their impact on strengthening the West Bank's technology economy.

It should be noted that the first two constraints discussed below—the need for greater technical skills and increased university-private sector interaction—result from the market analysis discussed in the prior section and are in fact typical of places developing a knowledge ecosystem. However, the extent to which these two constraints exist in the West Bank are exacerbated by the third and most challenging constraint, which is the political uncertainty and restrictions on movement. For example, it is more difficult to incorporate private sector training or partnership when other barriers related to ongoing conflict inhibit private sector leaders from making these kinds of decisions based purely on market opportunities.

Finding #1: While the labor force is highly educated, it is lacking specific technical and business training on par with current market demands.

University and private sector representatives consistently report that graduates are highly knowledgeable, but leave their respective educational institutions without expertise that they can apply immediately to the private sector. Educational institutions are very effective at delivering basic education within their fields of study—including, for example, specialties within engineering—but they are lagging significantly when it comes to tailoring this education to job opportunities. One multinational company executive said that the skill base is about five years behind private sector demands. Although Palestinian students are recruited heavily to work outside of the country, they often need to undergo intensive training from their employers to prepare to enter the workforce. While this finding is common in other areas building knowledge ecosystems, it is more pronounced for Rawabi because there is less of a private sector presence in the West Bank primarily due to the geo-political constraints of the region.

Finding #2: Despite an atmosphere of willingness, little interaction occurs between the universities and the private sector.

Activities that typically point to dynamic relationships between universities and private companies, such as business start-ups, R&D, and significant internship opportunities, are missing in the West Bank. Instead, these relationships seem to be dominated by the foundation and international donor community, who primarily invest in infrastructure such as new buildings, computer labs, and equipment. Severely lacking are programs and activities to bring the infrastructure to life and connect it with on-the-ground economic opportunity. For example, business incubators exist, but few if any companies are housed within them. Applied institutes are present but have limited, if any, projects for students and faculty to develop as part of their curriculum. Creating opportunities for university and private sector collaboration is a strong desire and challenge for most research universities striving for greater levels of entrepreneurship activity, jobs creation and revenues obtained from technology commercialization. Rawabi is different from these universities because it has a layer of additional market constraints described in the third finding that make it difficult for the universities to attract and retain research talent that typically feeds the entrepreneurship and innovation pipeline. Further, the issues of

movement compound these difficulties if university-private sector developed products are time or temperature sensitive. Checkpoints make delivery to market unpredictable and as a result either more costly or improbable.

Finding #3: Political and practical constraints require adaptation of the economic growth strategy before and until longer-term solutions occur.

The final constraint is the difficult economic, trade, and political circumstances of the West Bank and these are the most inconsistent with other knowledge ecosystems. This technology-led economic growth strategy diverges significantly from other strategies in stable environments because it explores options for economic growth within the local constraints facing Palestine. Three such barriers emerged: movement, political instability, and Israeli control. The economic growth strategy does not aim to dwell on these obstacles; instead, it seeks to build strategies based on current local competitiveness.

1. **Movement.** Checkpoints in the West Bank, and in particular from outside markets into Palestine effectively limit the movement of goods and workers across the territory. Direct access to Rawabi will be ensured through access roads and Palestinians will not face checkpoints within the West Bank between Ramallah and Rawabi. However checkpoints entering the West Bank remain an economic barrier. Difficulties arise for companies needing to transport supplies or finished products, and labor force mobility is restricted. Workers within the Palestinian territory have a difficult time moving between cities and towns, and people with international citizenship frequently face difficulties entering the country, often significantly hampering Palestine's ability to attract outside expertise.
2. **Politics.** The unpredictability of local and regional politics, and the resulting uncertainty of the business climate, often makes it very challenging to attract foreign direct investment or support from other investors. Confidence in healthy rates of return is harder to accomplish with the additional risk factors.
3. **Israeli control.** Infrastructure—including water, electricity and Internet connectivity—are in the end controlled by the Israeli government. This makes it very difficult for the local government to ensure adequate service provision to companies locating to Rawabi.

IV. CRITICAL SUCCESS FACTORS FOR RAWABI

Despite these constraints, the research and findings from the market analysis indicate that Rawabi must bridge five gaps in order to successfully develop a global knowledge ecosystem. It is noteworthy that all of these gaps are typical for areas creating knowledge ecosystems and strengthening their economies. The difference for developing this growth strategy for Rawabi is that the gaps are somewhat wider due to the unstable characteristics of the West Bank. These circumstances exacerbate some of the conditions that feed into these weaknesses such as less than desirable private sector and R&D activity. The critical success factors for Rawabi are greater partnering between education and industry; developing a more specialized workforce; building more innovative entrepreneurship; creating a global presence; and targeting strategies that seek to build prosperity for a wider region. As these continue to take hold, Rawabi will seed greater technology-based economic development for the West Bank.

1. Education-Industry Partnership

The first bottom-line reality is that the knowledge contained in the minds, laboratories, and libraries of professors and students at universities and technical colleges must creatively interact with the risk-taking, product-development, market-penetrating activities of businesses to generate innovations and new knowledge products and services. For this to happen, a new kind of business environment must evolve in Palestine in which education institutions and businesses collaborate on a regular and ongoing basis.

2. Specialized Workforce

The knowledge economy is already a powerful world economic force. Hundreds—if not thousands—of communities and regions are competing for the attention of international knowledge economy firms whose products are sold worldwide. These firms search for locations in growth markets where they can find the highest-quality, lowest-cost, technologically proficient labor force. Of great importance is that these competitive locations clearly have substantial numbers of would-be employees with a strong educational background in fields such as computer sciences, engineering, medicine, and the physical sciences—not to mention business skills related to these fields. The challenge is to add value by building niche labor markets equipped with workplace skills that match current private sector demands.

3. Innovative Entrepreneurship

In the knowledge-based economy, innovations, new ideas, new ways of manufacturing products, new business practices, and new customer preferences develop at a dizzying pace. Because of the speed of electronic communications and the ease and openness of knowledge transfer, change occurs more rapidly than at any time in history. For businesses to be competitive in such an environment, they need access to global market information and need great agility to adapt their products to fast-changing manufacturing technologies and consumer preferences. Once armed with that information, successful entrepreneurs innovate and respond to market niches with agility, creativity, and a zest for risk taking.

This is not easy. It calls for careful business planning and market research. It calls for business training that emphasizes agility and an environment within which access to knowledge can occur at any place, at any time, and with great ease. It calls for regulatory processes that are simple and quick and for effective legal, financial, and other mechanisms to support a culture of entrepreneurship that will jump-start and sustain an engine of job opportunity and local wealth creation.

4. Compelling Global Presence

The knowledge economy is a global phenomenon. Ideas, products, companies, labor, investment capital, and communications mechanisms interact on a worldwide basis. The professionals who constitute its labor force are cosmopolitans who appreciate many cultures, cuisines, and forms of entertainment. They work long, hard hours and they like to relax in ways that continue to fuel their multicultural creativity. The organizations they work for—international companies, foundations, nongovernmental organizations (NGOs), universities—are themselves international institutions. Therefore, to create a thriving knowledge economy, a community must build a global stage and attract to it an array of institutional and individual performers. When this happens, the results and ensuing opportunities are profound.

5. Prosperity and Identity for a Wider Region

Global economic forces, high value-addition, and product transmission by Internet (a critical insulation against politically motivated market disruptions) make the knowledge economy an overwhelming development priority for Rawabi. As the Vision Statement indicates, it will rely on the Palestinian economy's greatest asset—a highly educated and underemployed workforce. However, the benefits of this knowledge-based economy must be brought outside the borders of Rawabi itself to benefit the people, institutions, and community infrastructure of the larger region.

At the same time, Rawabi is situated in the midst of a region of Palestine known for its traditional, agricultural, village-oriented lifestyle. This is a great part of its beauty, charm, and appeal for prospective residents and investors. That way of life, with its material and artistic culture, architectural heritage, and traditional economic activities—olive farming, embroidery, handicrafts—needs to be celebrated and enhanced.

As with any region, these gaps taken together will require committed and dedicated work from a range of professionals and local stakeholders to ensure their progress over the long term. It is interesting to note also that these gaps are not that different from those of other international locations seeking to develop a knowledge ecosystem. Building off the current comparative advantages of Palestine, the strategy describes key initiatives in the following section that can lay the groundwork for a knowledge ecosystem at Rawabi.

V. SEEDING THE STRATEGY: RAWABI ANCHOR INITIATIVES

As Rawabi emerges from a design on paper to reality on the ground, it has the unique opportunity to create and enhance a future knowledge ecosystem in the West Bank. Like all regions creating economic strategies, Rawabi's knowledge ecosystem is being built through a set of grounded, market-based strategies that will plant seeds of economic opportunity to take root over time, meet the critical success factors and produce a knowledge-based economic center in the medium and long term. These five Anchor Initiatives have been designed to build immediate momentum for greater success in the future.

While the approach to developing these strategies is common to all regions, it is within these initiatives to build a knowledge ecosystem that Rawabi diverges most from the development of other science and technology centers. The action items within the strategy must be designed to work under current economic and political constraints of the marketplace in the West Bank to be successful over the short to medium term.

In fact the strategies below reflect a combination of initiatives that are in line with stable regions, while others are specifically designed to overcome the constraints particular to the West Bank. Specifically, the Rawabi Ambassadors and the Virtual Employment and Investment Network are specifically designed to work with and overcome existing constraints of movement and other associated risks of unstable regions while still working toward greater levels of business attraction and employment. The strategies are described in two stages below, immediate and medium-term.

Stage 1: Immediate Implementation—Immediate Results

1. Rawabi Ambassadors

The Rawabi Ambassadors are senior international, business, government, and university executives and philanthropists organized and equipped to communicate Rawabi's potential and its associated investment opportunities to potential investors. The Ambassadors are important because they offer a way to leverage the goodwill for Palestinians around the world while taking advantage of important business, foundation, university, and philanthropic connections of scores of influential Palestinians and other friends of Palestine. Ambassadors will be recruited as “champions” in key international market centers, provided with information on specific Rawabi investment opportunities, and supported by a professional business development staff. The ambassadors concept is used in the U.S. and internationally as a means of marketing a location, however in Rawabi this program is of heightened importance because friends of Palestine will be more likely to assume the greater risks of investing in a more unstable region than an average business. Further, the Palestinians and other champions of Rawabi play an important role for demonstrating additional success stories that are often used to build momentum for attracting greater private sector investment.

2. Rawabi Virtual Employment and Investment Network

The Virtual Employment and Investment Network (VEIN) is specifically designed to create business and job opportunities for a highly educated workforce in a town with significant barriers of movement. In this regard, the VEIN diverges most as a technology-led strategy as compared to politically and economically stable environments. The VEIN is a set of high-technology offices in international market centers that are connected to Rawabi by the latest 3D and video communications systems, and supported by business and job development professionals who facilitate investment discussions and build Palestinian business process outsourcing (BPO) and software service teams for international companies. The network is fulfilled with a counterpart set of similar high-technology offices in Ramallah, eventually to be moved to Rawabi itself when physical facilities are completed.

The VEIN is a critical means by which Rawabi can obtain external investment commitments and immediately enable existing West Bank companies to respond to requirements such as BPO and software professional services from international companies. It will be created and equipped with high-tech offices in international market centers and in Ramallah; employ professional business development staff to recruit investors and work with Greater Ramallah ICT and ICT-enabled firms to respond to new BPO opportunities.

Stage 2: Immediate Implementation—Medium-Term Results

The stage 2 strategies are similar to stable regions building a knowledge ecosystem.

3. Rawabi Technology Park

As a focal point for knowledge-economy company investments, university-industry R&D partnerships, and technology company incubation, the Rawabi Technology Park is the hub for the town's knowledge ecosystem. The technology park contains the state-of-the-art infrastructure—including the space, services, partnerships, and professional support services, as well as synergies among firms located within the Park—ultimately needed by knowledge-economy company

investors. The Park puts in place a combination of attractively priced real estate, fully serviced office space, and professional business development support services. In particular, the Park will aim to create an R&D organization, or recruit one or its subsidiary from abroad, in Rawabi to bolster R&D activity with the universities and private sector.

4. Rawabi Renaissance Center

At the nexus of a knowledge economy and cultural activity, the Renaissance Center is designed to be a beautiful, environmentally friendly set of interconnected structures that are at once a meeting place for ideas, leaders, and knowledge sharing, and an interactive training ground for knowledge-economy workers. This is an important initiative as both Rawabi and Rawabi's knowledge economy need a space where all participants and partners, residents and researchers, can come to learn, understand, and fully experience the positive outcomes of a knowledge ecosystem through human interaction. The building will embody these dynamics through a "signature" architectural design for the buildings and through key interactive learning programs.

5. Rawabi Artisans Business Park

The Rawabi Artisans Park takes advantage of the unique skills of nearby Palestinians and serves as a central location for artisans and other businesses in traditional and light industries where they can market their products, learn about production innovations, and receive business development and export-market support. The West Bank, like all regions, offers a distinct heritage that if showcased can attract investment from Rawabi residents, individuals living in surrounding communities, tourists, and potential foreign investors, while providing economic opportunity to many Palestinians. The Artisans Park will have the layout of a fully serviced industrial park supported by a program of business innovation, product design, and export market services.

VI. PUBLIC SECTOR ISSUES

As Rawabi becomes constructed, there are implications for management and governance in this technology-led growth strategy because the relationship of the legal status between the property and initiatives relative to municipal government is a critical institutional consideration for international investors. Rawabi has a unique opportunity to develop a state of the art innovative governance structure, gleaned from best practice around the world because there is little precedent in the West Bank for “economic zones” or “technology parks” in newly planned towns. In many regards, the laws, regulations and rules that set the conditions for business activity can be drafted wholesale and approved readily by government officials taking advantage of this unique timing and opportunity to establish a precedent in economic governance for knowledge ecosystems. On the other hand, if leaders do not seize this opportunity the opposite scenario is possible, which would be a quagmire of timely and fruitless hurdles that create significant barriers for the private sector to operate effectively. These two options, or any combination in between these ranges, will be determined by government officials and other local leaders as Rawabi is completed.

More specific considerations in governance and management challenges as Rawabi nears completion are described below.

Specific Considerations

In the United States and in many other parts of the world, property dedicated exclusively to special R&D or technology park initiatives is given some kind of separate status that allows a degree of independence from certain aspects of local government authority, typically:

- Exemption from property and other general taxes of the municipality, but with full payment for services to local utilities such as water and sewer, electricity, and so forth
- Control over land use planning, property use, architectural and landscape features, and so forth

The special authority status allows the following:

- to control the features and uses of the economic development property;
- to prevent municipal land use regulations from allowing uses inconsistent with the economic development initiative; and
- to prevent local government from treating the economic development property as a “cash cow” to subsidize the rest of the municipality.

Special economic or enterprise zones are a common practice, and may also involve special status vis à vis national taxation and some regulations. This legal status of the specific property within which the economic initiatives are carried out in Rawabi is a topic for consideration in coming months.

The final consideration is the reputation of the government for the jurisdiction within which the economic initiatives reside. Marketing Rawabi will have to include assurances that the governmental jurisdiction is a well-managed, efficient and effective public sector organization. It is important that early discussions with government take place to consider possibilities that may have particular appeal to potential international investors, such as:

- a professional city management form of municipal government, with appropriate political representative-elected officials, and a professional city manager responsible for oversight and management of municipal departments
- an economic development advisory group to the municipality that is a forum for input from investors to the municipality as well as for the municipality to represent broader citizens' interests to the economic investors/firms

VII. CONCLUSIONS

As the Rawabi Growth Strategy illustrates, its mission is similar to many other technology parks around the world—it is aiming for Rawabi to be a hub for job creation, economic transformation, and technology-based economic development in the West Bank. The main differences between Rawabi and other global innovation ecosystems in more stable regions is that Rawabi must develop in a way that takes into account its geopolitical constraints of limited and potentially uncontrolled movement, unpredictable politics; and reliance on the control (mostly in terms of physical infrastructure) of a foreign government. Further, the town is in its preliminary stages of construction and is not scheduled for completion in 2013 so in some instances planning for some of these issues it too early to be effective.

Rawabi is similar to knowledge and innovation ecosystems in that it is rich with assets that are crucial for technology-led economic development. It has a highly educated workforce and in particular an oversupply of science and engineering graduates. Rawabi is well aligned for greater R&D activity and entrepreneurship because of its close proximity to the Palestinian government and services center of Greater Ramallah, eleven internationally accredited universities, two of which are nearby and rich with science and technology assets. Bir Zeit University, with its engineering and ICT programs, is just 3.5 kilometers from Rawabi. An-Najah National University in Nablus, with its faculties of medicine, pharmacy, and nursing, is about 40 kilometers away.

RTI sought to harness these elements of innovation to build a stronger knowledge ecosystem for the West Bank, making this the thrust of the economic growth strategy. With these fundamentals, RTI and Bayti will nurture a stronger economic base in ICT, ICT-enabled industries, university-related assets, and the relatively highly educated workforce. The strategy encourages Rawabi to leverage local success within this fragile innovation ecosystem by linking to global opportunities through virtual employment as a means to jump-start greater use of its technology resources to connect with global companies. With this momentum, Rawabi's knowledge ecosystem can seed greater knowledge-based economic development through a science park, university-industry partnerships, and other innovation-led opportunities.