

### **Towards a Knowledge Based Economy in Palestine Nano or Not: Technology is the Answer**

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#### Abstract

The world's population has exceeded 7 billion in the year 2011 and continues to grow by 83 million people per year to reach an estimated 9 billion in 2050. The quest for safe, secure and sustainable sources to meet the need for those billions poses one of the most critical challenges of our time. Our Civilization will be seeking food, water, energy and other resources on a planet where humans are already shaping the web of life. The increasing demand for these resources drives research in academic and industrial institutions in order to discover new ways to produce fresh and safe drinking water, extract energy from renewable sources, and to develop more efficient and affordable products and practices.

Innovative research and novel technologies are the catalysts for the acceleration of growth in knowledge-based economies, which provide developing countries big opportunities to compete with those that are already developed. To play in the knowledge-based economy league, Palestinian policymakers must pave the way for the next economic engines by spear-heading the shift to a knowledge-based economy. People's education must be the highest priority starting at the elementary school level and going all the way to the university undergraduate and graduate levels. We must prepare the current and future generations of our students to lead the way towards a better future for our people.

Academic and industrial professionals have to lead the change; the status quo cannot be maintained. Academics have to liberate themselves from their self imposed confinement. As much as we need specialized scientific research in the fields of physics, chemistry, biology, nutrition, agriculture, medicine and many other disciplines- we must regroup in the world of multidisciplinary science and technology and work in teams. Artificial barriers and walls that exist between specialized units at academic

institutions must be removed; the challenges that face the Palestinian nation are too complex to be addressed by individual researchers or individual disciplines. The future economy has no room for ego and cannot tolerate ignorance, tardiness and incompetence. Albert Einstein once said: “Insanity is doing the same thing over and over again and expecting different results;” we must progress.

Despite the fact that Industrial institutions do not have the same brain power or the inventive capacities of academic institutions, they are often more disciplined in approaching problems and coming up with solutions within tough constraints. This is due to the fact that their own existence is threatened should they fail to reach productivity and profitability within certain timelines. A knowledge based economy integrates the brain power of academia with the efficiency and business skills of industry, and fuels this integral with every available resource from government, foundations and people. The result is a transformation of information into knowledge; leading to advanced technology, efficient production and job creation- all of which provide the cornerstones for a prosperous future for the nation as a whole.

A critical mass of young established Palestinian researchers must be brought together by building bridges at the national, regional and global levels to shed light on these issues and to develop policy recommendations. In the meantime, we do not need to reinvent the wheel, but rather we can learn from the experience of others. Developed countries have spent hundreds of billions of dollars to develop advances in medicine, engineering, material science, nanotechnology, biotechnology, telecommunication and advanced electronics. We must use this wealth of accumulated knowledge as a starting point for future development of innovations- providing fresh and safe drinking water to our people, developing efficient renewable energy sources, as well as preventing and curing common diseases that are striking our region.

Social networks have to be employed in our future efforts to document and collect needed knowledge from various media sources, to create collaborations at all levels and to build connectivity between philanthropists, researchers, policy makers, manufacturers and consumers. The effectiveness of social networks have been demonstrated in the past year in promoting democracy and breaking the fear factor among the young generations in the Arab World. The same tools can be used to break the fears of researchers, help promote their confidence and provide them with the necessary tools to

## Oral Presentation

achieve the goals of their scientific research. Social networks can also be used to raise the awareness of the people and help in making them active partners in building the future of the next generations.

In this presentation, we will present affordable and novel examples, approaches, and recommendations for professors, researchers, students, entrepreneurs, philanthropists and policy makers that can be implemented to provide innovative solutions to existing water, energy, food and health challenges facing the region in general, and Palestine in particular.