KFUPM Science Park (PAASP):

The New Era for Sustainable Technology Based Development

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(On behalf of PAASP Project Committee)

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ers of the PAASP Project & Their Responsibilities

Dr. Halim Hamid Redhwi

Chairman PAASP Project Committee, Overall Coordination & Petroleum/Petrochemicals Related Activities

Dr. Mohammad Abul-Hamayel

Legal Issues and Governmental Regulations, and others

Dr. Mohammad Al-Ohali

Conceptual/Detailed Planning, and others

Dr. Aymen Kayyal

Technology Transfer, Incubator/Spin-off Program, IP Management, etc.

Dr. Sadiq M. Sait

Conceptual/Detailed Planning and IT Related Activities, etc.

hree Part Outline

- Part I: General
  - ï Concept, Trends, Motives, Benefits, etc
- Part II: Will focus on PAASP
  - ï Conceptual Plan, Proposed Site, Potential Tenants, Financing, Consultants, Look-Ahead Plan, etc
- Part III: General Discussion and Conclusion

Part I

About Science Parks

- What are they?
- History and Trends
- Stakeholders
- Motives
- Relevant Joint Activities
- The Incubator

What Are They?

- Definitions and forms: A wide range.
- A generally accepted definition includes: A property based initiative which:
  - ï Has operational links with universities, research centers, and/or other higher education institutions
  - ï Is designed to encourage the formation and growth of knowledge based industries on high-added-value firms
  - ï Has a steady management team actively engaged in the transfer of technology and business skills
- Science parks in other parts of the world: Australia, Dubai, Finland, Hong Kong, Morocco, Brazil, UK, USA, everywhere, hundreds.
- IASP.

ow are they different.?

- One slide on "External Research projects at KFUPM departments and RI differs from Science Park concept". At SP Companies conduct research independently utilizing for their own motives by their own researchers, facilities, and University researchers without intervention of University. It differs from funded project awarded to University. I have a feeling that audience will confuse SP with external research projects at KFUPM. This need to be clarified.

History and Trend

- Earlier, most (if not all) universities were reluctant to embrace collaboration with industry, and industry similarly was shy of academia.
- Around 1980s, Universities began trying to contact industry.
  - ï The science park concept was an unfamiliar one and companies were mainly attracted to it by a desire to be near to the University's scientific research.
- Around 1994, Universities would contact companies through Science Parks (Research Parks).
- Now, there are networks of universities and networks of Science Parks.
- With time, science from laboratories (with work on proof of concept, prototyping), via liaison offices, incubators, nurseries, science parks is making to industry.

Stakeholders

The primary stakeholders in the development and sustenance of a Science Park are:

- The University
- Tenant firms and enterprises (industry component)
- Investors and Private Start-up Companies

Each of these stakeholders will play a vital role in the development and growth of the Science Park (PAASP).

Universityôs Motives

- Economic development through industry linked projects.
- University to become skilled at industry collaboration.
- Tenants forming useful associations with the University in the pursuit of any aspect of the university's mission.
- Opportunities for commercialization of University research, including via incubation facilities for start-ups.
- To earn income from ground rental in support of University research.

Joint Activities

- Joint research projects, especially for graduate and doctoral students.
- Work experience programs for undergrads.
- Sharing of university equipment and laboratories.
- Custom-designed education programs for tenants.
- Advice from tenants (companies) on the design of courses.
- Adjunct appointments of industry experts to teach and research in the university.
- Part and full-time jobs for university students.
- And others.

Joint Activities

- Larger companies can have their research work contracted to the university. (The proximity with the academic departments producing hundreds of graduates in an area of expertise is a plus).
- Companies can donate equipment, tools, expertise, etc., in return for using university labs, faculty, students.
- Senior staff of tenant companies can serve on University advisory boards.
- Tenants can lend the University valuable scientific equipment
- Tenants can offer scholarships to postgraduate students
- Many staff in tenant companies can enroll in our graduate programs

Types

- There are several models, depending on the objectives
- It could be a park or a network or parks (a park can be a network of companies)
- For a Science Park linked to a University, collaboration is the key
- May or may not have an Incubator

What is an Incubator?

Definition 1: An incubator is a welcoming and supporting partner for individuals eager to start innovative companies; it provides one with support in training, advice, funding, and offices until they find their own place.

Definition 2: A comprehensive growth facility that generates and sustains the dynamic process of business enterprise development through provision of infrastructural, logistical and financial support for young start-up firms and small and medium-sized enterprises willing to build commercially viable products and services over innovative technologies.

its to KFUPM graduates

One slide on how incubators will benefit fresh university graduate with entrepreneur and technopreneur attitude.

Part II

eptual Plan of PAASP

- The Vision
- The Mission
- Goals/Objectives (Strategic) Direction
- Stakeholders & Benefits
- Funding & Finance
- Governance & Management
- Uniqueness of PAASP
- Some Critical Success Factors

The Vision

To create an environment within the university that will forge closer ties and enduring links between academia and the industry spanning a spectrum of research and development issues for technological and economic growth.

e Mission Statement

To institute a financially self-sustaining physical entity that would foster technological innovation and accelerate its commercial deployment through sustained collaboration with established companies as well as promote start-up enterprises through business incubator programs.

Goals/Objectives

The primary purpose of instituting a science park within KFUPM are:

- To forge a strong collaboration between the university and industry in R&D.
- To promote small tech-specific businesses and start-ups through an incubator program.
- To direct significant technology-driven foreign investment and presence into the Kingdom
- Commercialization of research
- Providing a strong point of presence for major international companies and enterprises
- Technology Transfer: Channeling new global technologies and practices into the Kingdom

enefits to KFUPM

- Close links and collaborative efforts between the science park's businesses and tenants and the university's faculty, researchers and students
- Attraction and retention from amongst the best faculty and researchers
- Industrial presence for the benefit of students
- Employment opportunities for students (during study and upon graduation)
- The presence of International major companies will help keep the university abreast of the latest technological trends and developments

efits to Tenant Firms

- Tenant companies can have a significant point of presence in the region especially from an R&D perspective.
- Availability of a skilled work-force pool from graduate and undergraduate student body.
- Assistance in identifying university programs and resources that best relate to the tenant's research.
- Adjunct faculty participation from tenants
- Opportunity for commercial deployment of university's proprietary patents and innovations.
- Access to the university's advanced educational and training programs

enefits to Investors

- Venture Capital Companies can get involved in developing infrastructure for PAASP and can go beyond it by managing the park as a commercially profitable enterprise.
- Private start-up companies would have access to the incubator program at PAASP, which would provide a stable growth catalyst. This is in addition to other research and development facilities as available to other tenants.
- Developing companies would benefit from the mentoring, investment and marketing support which established larger companies could provide.

Funding & Finance

- Given its ideal location and the explicit returns for the Industry, it is proposed that the park should be financed **entirely** by private investment rather than through government funding.
- This would not only give the university independence from this huge task, but also would be a measure of the Industry's interest and initiative in the project.
- Under this model, the university would be a privileged decision member responsible for laying down standards and leasing tenants while maintenance and construction would be the responsibility of a private sector enterprise.

Funding & Finance

- Under the proposed financial system, the University will provide the land-area for the science park, entering into a lease agreement with a private enterprise for construction and development.
- This enterprise may receive its returns from a percentage of the land and building rentals.
- The PAASP Committee has been in contact with a private company which with its experience in funding and managing such projects has expressed interest to partner with the university and secure funding for the SOLP:
  - Development of the Concept as a Commercial Venture
  - Investment through SOLP in the Commercial Venture
  - Advisory role in the Project implementation

rnance & Management

- The effective management and governance of the science park is based on the collaboration between three major parties:
  - the university, knowledge and resources
  - industry: financing from the industry
  - regulations and incentives from the government
- Park managed as a commercial enterprise by a Park Manager, who heads the management team, and is overseen by a board of directors

uccess Factors: Categories

Consensus on the factors that contribute to the success or failure of university-related science parks. These can be placed in two categories:

1. Factors associated with the site, its size and location. This also includes the university's inclination and research base to contribute and gain from such a relationship.
2. Factors associated with the university's administration and sponsoring of the project.

Critical Success Factors

Factors that can greatly impact the development and growth are:

1. Planning, leadership, commitment and involvement of all concerned parties for effective implementation of the plan
2. The plan should be based on clear objectives, well integrated with the long-term mission and goal of the university
3. Close interaction between the tenant firms and the university (openness)
4. A clear management structure with a Park Manager appointed at an early stage
5. Preference to companies in the general strengths of the university

Proposed Site

Map

- Get the picture

IESCO Experts Visit

- Will review the 'Conceptual Plan' and 'Master Plan' being developed
- Will assist the in Developing a detailed Operational Plan
- Make presentations
- Meet with representative of Schlumberger, SAGIA, SABIC, and S. Aramco, etc
- Will share their experience in the establishment, operation, and critical success factors of Science Parks

ESCO Expert Group Members

1. Datuk Dr. Mohamad Salleh Ismail, President & CEO of Technology Park, Malaysia
2. Dr. Marco Baccanti, President of International Association of Science Park (IASP) and Director Centuria Parco Scientifico Technologico, Italy
3. Mr. Harry Nicholls, President ADCAL, UK
4. Mr. Nur Yuslan, UNESCO, Paris, France

Part III

A Fact

Despite the considerable potential benefits, world-wide experience shows that genuine collaboration between universities and industry within science parks has been difficult to achieve. Companies in science parks are commercially oriented and need to be persuaded that the University offers attractions.

ıment & The Challenge

Studies have concluded that many science parks are mainly a form of prestigious real estate development, physically isolated from the surrounding society and thus quite unlikely to generate productive synergies of any kind. (Phillimore et al, XV IASP World Conference Proceedings)

KFUPM needs to accept this ***challenge*** and work hard to demonstrate its enthusiasm and ability to offer value to tenant companies

oader goals: Caution

- All future tenants must be capable of willing to work with the University.
- Provisions must be worked out to ensure that the Park achieves the University's aims and does not degenerate into just another business park
- University must attract organizations capable of 'forming any useful association with the University’

What to Expect?

- The university will be surrounded by world's leading technology companies
- Industry participation in academia
- The university will build on its current strengths due to proximity with industry. Proximity will assist greatly in fostering relationship with tenants
- The research/teaching programs will concentrate on modern high technology, and university's will win recognition through research grants and sponsorships
- Since land in our area is attractive, the park can be entirely financed through the private investments rather than through the state and government funding

How to Encourage Collaboration

- Involving faculty in planning & tenant selection
- RI and University Research Office can be tenants
- Appointing a Park Manager early
- The university having a stake in the parks ongoing development
- Offering tenants privileged access to university facilities
- Holding regular seminars and briefings, where university and tenant staff can mingle and make informal contacts
- Special scholarships for students to conduct their research projects in the Park
- Inviting senior staff of tenant companies to join university advisory boards

Current Status

- Master plan is being created and approvals are being sought
- Legal issues are being looked into
- Offset program (SOLP) is being contacted both directly and via a private enterprise, and alternate modes of financing are investigated.
- Tenants are sending to the university their letters-of-intent (Idemitsu, Japan; Cytec, Italy; IFP, France, Membrana of Germany)
- Few have already moved in physically/virtually. Some will construct their own building with our specs (Schlumberger, France; CIBA, Switzerland; JCCP, Japan)

Finally é

- The PAASP is a strong statement of KFUPM's determination to maintain its high standards in research, technological development and academic excellence.
- It is an initiative to couple the university's resources and talent with the technological capabilities of the industrial sector, thereby creating a highly collaborative environment with vast potential for joint technological research and development.
- With the establishment of this science park, KFUPM moves forward into its fiftieth year with a far-reaching initiative that will be a dynamic catalyst for technological development and collaboration between the university and the industry.

cknowledgments é

On behalf of the PAASP Project Committee I would like to extend thanks to all who contributed to making this presentation in terms of supplying material, editing text, preparing the layout, organization, etc. In particular

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