

# CULTIVATING A SUSTAINABLE ECOSYSTEM FOR ENTREPRENEURSHIP FOR NATIONAL TRANSFORMATION: SAUDI ARAMCO ENTREPRENEURSHIP CENTER

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## ABSTRACT

**Purpose:** The purpose of this paper is to apprise the readers of the initiatives of Saudi Aramco in entrepreneurship development and growth in the country. Saudi Aramco Entrepreneurship Center (SAEC) was launched in 2011 with an objective to develop local enterprises in the Kingdom of Saudi Arabia (KSA) by encouraging aspiring entrepreneurs to establish or expand Small and Medium-Sized Enterprises (SMEs), to support existing SMEs, and to cultivate a sustainable entrepreneurial ecosystem. Aligned with the mission, the centre focuses on the following Support: Start-ups, Financial, Growth and Ecosystem Development. In addition, 'Aramco Entrepreneurship Ventures (AEV)' was created to support local venturing. Business Incubation was initiated to complement the financial support programs. Despite its relatively short life span, the centre achieved remarkable achievements – nearly 50 new start-up businesses by various initiatives, training for over 2000 potential entrepreneurs, and offer of hundreds of educational sessions throughout the KSA, just to name a few.

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**Design/Methodology/Approach:** The contribution is based on the work actually conducted by the Aramco entrepreneurship center.

**Findings/Implications:** Entrepreneurship atmosphere is now vibrant while an effective ecosystem is in an early stage of cultivation. The centre achieved tremendous success in a short period of time. What are the success factors for SAEC? The most critical success factor for SAEC was the support from the visionary leader, Saudi Aramco CEO, who drove this program by engagement of key players for initiating an entrepreneurial ecosystem. Besides funding, budget support to the entrepreneurs, the brand of Saudi Aramco and extensive training of the potential entrepreneurs were critical success factors.

**Originality/Value of paper:** The paper is based on actual work performance.

**Keywords:** Entrepreneurship; Ecosystem; Economic development; Saudi Arabia and Aramco entrepreneurship center.

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## INTRODUCTION: BACKGROUND

The youth unemployment is an emerging issue for Saudi Arabia, although the problem is not as severe as other nations. Over 85% of the young people reside in developing countries, while around the world about 45% of the total unemployed people are young – below 30 years old. Many of the young people received early education and even university degrees, but are unable to find work (UN Report, 2000). Converting the job seekers into job-creators is a strong mission in the Kingdom of Saudi Arabia (KSA). There is an urgent need to offer educational opportunities to empower the skills to realise the potential of the young and those who are seeking jobs developing confidence and motivation to for example, become an entrepreneur. Their only current option is to be a job seeker.

The Saudi Aramco Entrepreneurship Center (SAEC) was formally established in 2011 as a key enabler and contributor to KSA's prosperity to become a more enriched nation, with the active support of the CEO of Saudi Aramco. The centre was formed with an objective to 'promote and foster economic development' while developing an ecosystem to sustain entrepreneurship. The Center's vision was to provide leadership in promoting entrepreneurship in KSA. The center's mission was to support its vision through :

1. develop successful Entrepreneurs
2. support the creation and growth of Small and Medium Enterprises and
3. cultivate a regional Entrepreneurial Ecosystem.

The objective of this paper review is to review the strategy, program and activities of leading to achievements of the center since its conception, and its current journey in framing an 'Entrepreneurial Ecosystem'. The paper also outlines future enablers, as the centre is

moving forward in cultivating a sustainable ecosystem for Kingdom's continuous economic enrichment.

## INTRODUCTION

Saudi Arabia has been the home of business leaders for a long time, going back centuries. It is known that The Prophet Muhammad and many of his followers were merchants. It is not a secret that Ms. Khadija, his esteemed wife, was a highly successful business woman long before she met the Prophet (2). The area was also part of ancient silk route connecting the traders between eastern nations, which had resources, to the western countries, who wanted those resources. But the Kingdom's business environment has not always favored or focused on start-ups and new ventures. As recent as 15 years ago, the entrepreneurial environment on the start-up level was largely lacking in some aspects.

Today, start-ups are blooming again. Thanks to this transformation starts at the top with H.M. King Abdullah bin Abdul Aziz Al-Saud and the current King H.R.H. Sultan bin Abdul Aziz Al-Saud. Through a variety of forward looking programs, both leaders empowered organisations, universities, various chambers of commerce entities and private foundations to create jobs for young professionals. These leaders formed the foundation for the next generation of business leaders (SAGIA, 2009; US Arab Tradeline, 2010).

In 2006, Saudi Arabia made it easier to start a business by simplifying processes at its Ministry of Commerce and cut registration time from 64 days to 39. The Saudi Arabian General Investment Agency (SAGIA) finalised agreements with 17 government agencies to remove impediments and introduce incentives for businesses. SAGIA also launched targeting the top ten by 2010, the time for start-up dropped from 39 days to 15 days by eliminating layers of bureaucracy. Procedures at various Ministry level were sped up, various requirements were merged and registration with the Chamber of commerce was automated. The reforms cut procedures for forming a new company from 13 to 7 steps and the cost from 59% of income per capita to 32% (SAGIA, 2009). Saudi Aramco launched a strong program on Innovation and Intellectual property (Khan, 2012), and ensured that benefits are captured in many levels by leveraging its Innovation, intellectual vvvproperty and intellectual capital to transform KSA into a knowledge-based economy (Khan, 2008, 2010, 2011; Khan and Al-Ansari, 2005; Khursani et al., 2011; Khan and Germeraad, 2011).

Saudi Aramco has played a pivotal role in the KSA's epic journey. With the first discoveries of oil, Saudi Aramco has been at the forefront of economic development. The company's local industrial development efforts spanning from the late 1950s to now, and led to the creation of sustainable many local enterprises. These enterprises are among the largest in a variety of industries today and have created thousands of jobs. This progress demonstrates how entrepreneurship is one of the main drivers behind economic diversification, innovation and job creation. Saudi Aramco created a noticeable national public responsibility practices, long before its Corporate Social Responsibility initiative. Consistent with the Kingdom philosophy, the vision of Aramco Entrepreneurship, defined by the CEO of Saudi Aramco, to develop a strong, vibrant, diverse economy in Saudi Arabia, while sustaining an infrastructure that will support entrepreneurs and new start-up businesses creating local Saudi jobs, in a sustainable manner by focusing on innovative technologies. This paper highlights past and present achievements while highlighting future initiatives to further the strategic objectives of the Centre.

## THE ROADMAP OF AEC IN VARIOUS STAGES OF DEVELOPMENT TO SUPPORT THE STRATEGY

The concept of an ‘Entrepreneurship Center’ was originally initiated in 2008 to address the critical challenges and realise the opportunities within the KSA’s growing economy. The centre was originally called ‘Waed’ and the name is still prevalent today. Starting as early as in 2008, Waed served as a bridge between local communities and Saudi Aramco to integrate resources of SAEC and local communities to meet the needs that attribute to the economic growth. The early support involved launching new loan programs. Since then the center’s journey to support entrepreneurs includes many initiatives and challenges. In 2011, we formally structured SAEC Limited Company and the formally focused attention to support entrepreneurs through business plan training. Currently, our program trained over 2500 individuals.

We implemented dedicated funding programs to support SME development. Later on, our programs introduced Venture Capital and business incubation to complement our financial capabilities. Also, we optimised our major processes and started building our human capabilities and capacity. Moving forward, during 2014–2017 and beyond, the centre has undertaken new initiatives while strengthening its current programs. Currently, we are enhancing our governance, sourcing strategies, human capital capabilities and taking on initiatives to grow our key strategic objectives. Throughout the process, our goal was to serve as a key enabler and contributor to the Kingdom’s progression.

The initiatives included:

- Provide individual technical assistance in business plan development to local entrepreneurs. Provide education and training to local entrepreneurs. Core competency in developing youth entrepreneurship programs and also for family businesses.
- Elevate competencies of the employees to productively collaborate with the venture capitalists and other key influencers in the economic development in KSA.
- Leverage Saudi Aramco brand.

## SUCCESS FROM OUR CURRENT ACTIVITIES AND SUPPORT STRUCTURES (STAGE II)

Aramco Entrepreneurship Center extended its service offerings around strategic areas of delivery: Outreach, Startup Support, Policy and Procedures, Financial Support and HR Development. These activities supported to Growth. Creating an ecosystem for sustaining entrepreneurship is under development, and is evolving.

- Startup Support Services is geared towards addressing what is considered the greatest challenges entrepreneurs face in the Kingdom today. There is lack the know-how to develop an idea into a business. The fear of failure to undertake a venture in a risk-averse culture is a challenge. These vital issues topic will be addressed moving forward. One of the key development programs we already initiated is the Business plan advisory and coaching program. Though these programs we achieved a lot. For example, during the past 12 months alone we:
  - Reviewed 800 applications.
  - Trained over 500 applicants in BP formulation.

- Engaged/coached in the development of 100 business plans.
- Worked with our entrepreneurs to finalise 60 business plans.

The majority of our applicants are coming from the eastern province although a sizeable portion comes from other areas of KSA. We hope to diversify our outreach and especially in Jeddah.

- Financial Services is a core service offering in SAEC. The objective is to financially enable a professional to jump-start their business or expand their existing business into the market. Through collateral free loans, the program is focused on Information and Communication Technology, Energy including Oil, Gas, Solar and other Renewables, Healthcare, Education, Chemicals and its support industries.
- *Growth Services*: this service is a commitment to extend support to early-stage ventures beyond their point of operations. This service perhaps forms the foundation of the company that may define the companies' ultimate success.

## EVOLUTION OR THE STAGE III

The Stage III (as shown in Figure 1) is aimed at cultivation of an ecosystem to sustain entrepreneurship, by creating a knowledge-based economy. This is perhaps the most challenging task of Centre. Much of the entrepreneurship centered in the world excelled for a short period of time, but ultimately died off for various reasons. Who do we sustain entrepreneurship (12, 13), a topic that widely discussed? The Centre is aimed to enable entrepreneurial and SME support at different levels, starting at the individual level in promoting the entrepreneurial mindset and spirit, encouraging a greater number of professionals to become job creators rather than job seekers, and reaching up to the Kingdom policies and regulations level, influencing its effectiveness in supporting the SME business environment. The AEC has been highly successfully to launch programs and processes with great impact. Despite our successes, we can still do better. Therefore, a brief analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT) for the Centre is provided.

- *The results of SWOT Analysis*: with a goal to enhance our performance, the initial results of SWAT analysis of the current system can be summarised in the following manner.

Strengths or current system include:

- *Dedicate passionate individuals*: the centre has been endowed with a large number of dedicated and passionate individuals.
- Many of these professionals have direct link between with grass roots individuals and professionals, as well as connections with local universities.
- The professionals have exceptional ability to adapt programs to address the local needs.

Weaknesses:

- Some areas of enhancement include:
  - Development and training program for the employees.
  - The current business plan advisory has proven to be inefficient, where Business Advisor does not leverage the subject matter experts other partner entities, or topics such as intellectual property.



**Opportunities:**

- Changing demography and larger number of younger population. Large growth of retired workers, who are eager to contribute.
- Increased desire and need for self-employment.

**Threats:**

- Brain drain may disrupt current operations. May of our employees are well sought out and may leave for other opportunities.
- Mitigation of the Potential Weakness and Leveraging Opportunities – Future Plans: The centre plans to place a great emphasis addressing the above issues while tackling the urgency of cultivating an efficient ecosystem serving entrepreneurs and SME's in a sustainable manner. Naturally we need to define 'sustainability' and 'ecosystem' in the context of 'entrepreneurship'.

*What is Sustainability?* Sustainability means proactive innovative decision-making to minimise negative impacts while maximising environmental, social and economic prosperity. Areas such as, environmental, social and economic viability, as shown in Figure 1, can define sustainability (Adams, 2006). Sustainability requires an interdependent 'ecosystem' that is viable for a prolonged period of time (Drucker, 1985).

## WHAT IS AN ECOSYSTEM?

All ecosystems are characterised by diversity – diversity of population, diversity of activities, and background aimed at diverse needs to sustain life. In the context of entrepreneurship, the ecosystem means the participation, within a society by the talented risk-taking individuals who are passionate about a given opportunity with a goal to serve others in the society with the support and mentoring of experts and mentors to benefit themselves and others (Schumpeter, 1976). An ecosystem must be nourished. Support systems such as appropriate structure, financial equity or loan would nurture a social ecosystem so that the entrepreneurs evolve and everyone in the ecosystem including the risk-takers would benefit. As defined elsewhere, the organisational capital is a function of talents, relationships and the structures (well-defined process and procedures). Without these essentials ingredients no human ecosystem or entrepreneurship can prevail (Khan and Germaard, 2011; Khursani et al., 2011).

How does SAEC plan to cultivate an ecosystem for sustainability? The following are part of the considerations including education/training, efficient business plan development, extending outreach for deal-sourcing, lean-start-ups and targeted networking.

*Education and Training:* education is the primary vehicle of basic entrepreneurs. Priming the business capability of a would-be entrepreneur into well-developed successful business professionals is the most difficult part of any entrepreneurship program. During the next three years, the centre hopes to reach out to over 3000 individuals across the Kingdom. SAEC also hopes to provide advanced business development methods to foster the business planning exercise. The improved training program will be a combination:

1. e-learning
2. classroom training and
3. mentoring and coaching.

All training will be customisable based on the needs. This will not only allow SAEC to reach a wider audience, but will also improve on the quality of learning through advanced techniques. Lean business methods will be emphasised.

- *Competitions and 'Lean Start-up' Model:* SAEC will be a strong catalyst to cultivate an ecosystem that drives an entrepreneurial spirit through different engagements, awareness activation, marketing and competitions. SAEC will pursue an effective marketing campaign to recognition and quality sourcing of promising ideas and ventures. This will be achieved through a national Business Plan Competition (BPC) that shall include training and coaching of select entrepreneurs with funding. In addition, various motivational workshops will be held where to develop successful entrepreneurs with the assistance efficient lean business plan method. It is important to recognise that while existing companies execute a business model, start-ups look for one, which shapes the need for 'lean start-up' approach. In this model an organisation aimed to identify a 'repeatable and scalable business model'. For the purpose of broader goal or sourcing of potential entrepreneurs for AEC programs and for BPC will include:
  - Direct search and targeted 'hunting', based on specific search in specific areas.
  - Enhanced activities in the incubator level.
  - Identify and publish market-landscaping studies to support to identify potential entrepreneurs with specific areas of opportunities.
  - Participation in technical and non-technical events, as appropriate.
  - Engagement in major KSA events.
  - Attraction of the participants highlights our success stories; utilise our social media.
  - Technical publications on entrepreneurship and innovation by the centre employees.
  - Leverage on Saudi Aramco reputation.
  - Respond to requests to presented AEC in a timely/professional manner.
- *Targeted Innovation and Networking:* AEC will target innovative ventures by connecting with top Saudi technical and academic institutes, and increase collaboration and continue engaging with other organisations such as Dhahran Techno Valley, King Abdullah University of Science and Technology and King Abdul Aziz City for Science and Technology – Badir incubator, Riyadh, Kafalah, Qutoof, Saudi Industrial Development Fund and others. Partnerships will also be used for identifying promising Small and Medium-Sized Enterprises (SMEs) that SAEC can support by funding or by other support programs. If appropriate, targeting innovation competitions can be launched nationally, as done previously by Saudi Aramco.
- *Training and Advancement of Center Employees:* figure below shows the level of experience of the employees of the centre. Over 67% of the employees currently have less than three years of experience. Therefore, there is urgency in training of the employees. To enhance the excellence of our employees, a number of new initiatives can be deployed:
  - The centre plans to focus on employee training to ensure training is relevant and applicable for the benefit for KSA. Employees would initiate the needed plan of action to incorporate training in their career goals.
  - A higher standard for new staff with skill sets (with real world experience) consistent with AEC requirements will be considered.
  - Ensure that employees understand the broad objectives and also know which responsibilities are priorities.

- Develop synergy between other organisation, building expertise in the area of energy and water, food and agricultural-based businesses and family businesses.
  - Integrate human and capital resources between-program areas.
  - Provide leadership in core competencies while leveraging partnerships with other national organisations.
  - Increase promotion of entrepreneurship resources at the regional level.
  - Decrease the negative connotation of entrepreneurship. As an example, an author described entrepreneurs as the disruptors not unlike ‘pirates on the high seas of capitalism’ (Lawrence, 2014).
  - Enhanced Support for Incubation, Start-ups and Growth of SMEs.
- *Start-up program*: goal-based networking through individual introductions, exposure provided at exhibitions and events will introduce new ventures and business opportunity. This strategy focuses on encouraging, training and developing successful entrepreneurs to become strong agents in the ecosystem. The Centre will achieve this through improving the quality and reach of AEC’s incubation support, and through leveraging access to quality mentors and advisors from the networks of Saudi Aramco, universities, and other partner institutes, and through delivering training and development programs during the following three years with the aim to reach more than 3000 men and women across the Kingdom.
  - *Start-up Lab*: Startup Lab by AEC initiated in 2012, targets innovative entrepreneurs in the early stages of the development to help develop proof-of-concept and reduce risk to funding entities. Workshops will include use of lean-startup, market research, finance, marketing, pitching, legal and branding. In addition, motivational workshops will be held. It is important to remember that while existing companies execute a business model, start-ups look for one, which shapes the need for ‘lean start-up’ approach aimed to identify a ‘repeatable and scalable business model’. The individuals will learn to achieve failure and success quickly.
  - Co-op to Entrepreneur (C2E) program is aimed to educate the university students. The Program launched in 2012 will continue to target students with innovative ideas. The successful C2E model has been expanded to include candidates from all universities in KSA and the Saudi students studying abroad. The plan is to embrace 75 Co-op students across the different incubators.
  - *Support for Women Entrepreneurs*: plans to establish additional incubators in different areas of the Kingdom will be pursued throughout the coming three years, and along with this expansion. AEC embark on the establishment of business centre for women, aiming to support and build capacity of women entrepreneurs in Saudi Arabia.
  - *Partnering with Vocational Training Center*: AEC will also evaluate establishing incubators at major Technical Vocational Training Centers and other potential institutes across the Kingdom. Building on the best practices, the incubation program will leverage the National Business Incubators Association’s programs. A total of 45 new startup ventures are expected to pass through AEC incubators per year.
  - *Technology-based Entrepreneurship*: in line with its strategy to support innovative ventures and accelerate the development of technology-based entrepreneurs, AEC will launch technology focused competitions to tackle key challenges within the Kingdom, with the objective to solicit innovative solutions, and facilitate the process of incubating and commercialising those solutions in the Kingdom. This will build on the success of Aramco



Entrepreneurship Center's 2014 highly successful competition on Desalination using Renewable Energy, which addressed a key strategic need for the country, and received global attention. Saudi Aramco has been very successful in developing internal and global competitions to identify the best concepts to benefit the company and the Kingdom, respectively (Khan, 2010, 2015).

- *Technology-based Entrepreneurship by Leveraging Corporate Intellectual Property*: in line with its strategy to support innovative ventures and accelerate the development of tech-based entrepreneurs, AEC will launch technology focused competitions by leveraging on the inventions created by its employees, by creating in-Kingdom based ventures. IP can be a powerful enabler to create a sustainable ecosystem and can transform an entire nation (Khan, 2011). Just look no further than the Silicon Valley of USA.
- *State-of-the Art Technical Consultancy Services for SMEs*: The Technical Consultancy Service is currently an eight-week program which aims at enhancing operational efficiency for SMEs through challenging projects conducted by university summer students. The students will employ their multidisciplinary background and academic tool kits to develop new businesses. In addition to the benefits attained by the entrepreneurs in improving their businesses, the students will benefit from the exposure to the entrepreneurship world and may potentially influence them to start their own business.
- *Opportunity Identification – Market and Technology Landscaping*: the Center can attempt to mitigate of the fear of risk-taking in a risk-averse culture is an on-going basis. This can be done, partly, by Identifying and publishing market and technology landscape studies to identify potential areas of opportunities.
- *Intellectual property, IP and IP Landscaping*: landscaping the analysing in a given technology area allows IP to act as a powerful intelligence tool. The strategic use of IP along with 'forensic' technical analysis to support competitive intelligence and IP programs can assist a start-up to meet the challenges of the dynamic market place. It is well known that IP landscape provides the direction of technology. No competitive analysis of a technology is complete without a patent landscape. A patent landscape demonstrates insight into the competitors' strategic direction now and in the future and possibly, future product offerings. No technology-based entrepreneur should overlook this powerful technology tool.

## ENHANCED FINANCIAL SUPPORT

- *Financial Services*: AEC will further diversify its portfolio with a priority focus on manufacturing and services sectors. During the over the next three years, the center aims to reach more than 3000 individuals across the Kingdom. In the coming three years, the Center aims to fund more than 80 companies that will lead to creating over 2500 new jobs. On growth services the centre plans to provide expert advice many areas of business to enhance sustainability. Additionally, goal-based networking will develop new business opportunities for the ventures through individual introductions, as well as exposures provided at exhibitions and events.
- AEC Equity investments will help to reduce the risk taken by entrepreneurs and will prioritise innovative, scalable ventures, maintaining a target level of eight equity investments per annum throughout the business plan period.

- *Growth Services*: management consultancy will be provided to assist startups to gain competitive advantages by receiving expert advice covering technical, legal, accounting, health safety and environment, internal policies and procedures, marketing, branding and other areas of business. Additionally, goal-based networking opportunities will be accomplished with the aim of developing new business opportunities for the ventures through individual introductions as well as exposure provided at exhibitions and events. Center currently offers a traditional four-day instructor led classroom training on business plan formulation which covers the basic elements of a sound business plan, such as market demand, financial, organisation, business process, legal, etc.
- *Post Investment Support*: to ensure Saudi Aramco's interests are protected and shareholder value is maximised in the Venture Capital Investments, Aramco Entrepreneurship Ventures (AEV) will develop a comprehensive governance function to provide broad support to the companies approved by the Board Investment Committee.
- *Assessment Matrix*: the success of the current and future initiatives will be measured by various indicators. On funding and the results, the centre has already facilitated the creation of nearly 50 companies with anticipated direct job creation of over 2000 jobs by 2019. The center will fund over 80 companies by 2019 that will lead to creating over 2500 new jobs. To increase the focus on quality and geographical reach, loan-funds targets will be maintained, with a slight increase over the three-year period reaching a level of 22 loans in the year 2017. Additional measures and indicators include:
  - Percent of increase of information sharing activities each year.
  - No of people trained each year.
  - The number of entrepreneurs developed, and the number that launched a business.
  - The SMEs served and developed.
  - The number of partners developed.
  - Change in behaviour via appropriate matrices.
  - The defined KPIs should also include innovations and patents resulted from these companies.
  - Monitor how many concepts were translated to prototype, and ventures: Inspiration to Concept to Prototypes, to Ventures.

*Summary – Moving Forward*: the current challenges include continued training to mitigate entrepreneurs' fear and challenges that they face to translate great concepts, especially those involve new technology, into businesses. Moving forward, the Center desires to improving the quality of deals, incubation support, leveraging access to quality mentors/advisors from the networks of universities, and other partner institutes. Aligned with strategic objectives, the centre is focused on establishing and emphasising current programs while identifying new opportunities based on gaps and needs. For example, the Centre will also focus on technology-based ventures; consider commercialising corporate inventions by deploying new start-ups that would enrich the needed technology for KSA while creating a sustainable model of local technology transfer. Finally, the Centre plans to mitigate of the fear of risk-taking in a risk-averse culture is an on-going basis. This can be done, partly, by Identifying and publishing market and technology and intellectual property landscape studies to identify areas of opportunities, so that potential entrepreneurs are better informed and thereby empowered.

## CONCLUDING REMARKS

Aramco Entrepreneurship Center was launched in 2011 with an objective to develop local enterprises in KSA by encouraging aspiring entrepreneurs, supporting SMEs to expand. The Centre focused on the following Support areas: Start-up, Financial, Growth and Ecosystem Development. Start-up services include access to quality mentors/advisors through delivering training and development programs. During the next three years, the center aims to

1. reach and train over 3000 young professionals across KSA
2. fund over 80 companies that will lead to creating over 2500 new high-paying jobs.

AEV and Incubator Center was created to support local entrepreneurship and venturing. The growth services of the centre includes expert advice covering technical, legal, accounting, health safety and environment, related policies and procedures, marketing, branding and other areas of business. Also, goal-based networking through individual introductions, exposure provided at exhibitions and events will introduce new ventures and business opportunity. The Center will encourage technology-based venturing. The Center plans to offer programs that would mitigate the fear of risk-taking in a risk-averse culture in an on-going basis. This can be done, partly, by Identifying and publishing market and technology landscape studies to identify potential areas of opportunities. It is anticipated by leveraging these and other sustaining events in the KSA, an appropriate ecosystem of sustainable entrepreneurship will be evolved. This ecosystem, when fully developed, the vision to develop a strong, vibrant, diverse economy in Saudi Arabia by entrepreneurship will be realised, and the Kingdom of the Saudi Arabia will be transformed.

## ACKNOWLEDGEMENTS

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## BIOGRAPHICAL NOTES

Rashid Khan is now the Head of Intellectual Property and Innovation for Aramco Entrepreneurship. Previously, he was the founding member of Intellectual Assets Management for Saudi Aramco. He transformed the Intellectual Property domain of Saudi Aramco. He developed the partnership including IP agreements with about 50 organisations, including organisations like Stanford, MIT, Imperial, National University of Singapore, Hong Kong University of Science & Technology, etc. reflecting >100 million in value. He worked in diverse areas and lectured at Society of Petroleum Engineers, Harvard and MIT, etc. He served as an advisor/mentor for numerous entrepreneurial events and taught on patent monetization at MIT, and entrepreneurship at KFUPM.

Jamal Al-Akkadafter an exciting and challenging decade as entrepreneur from 1980s to 1990s, he took different paths working on several interesting and challenging assignments. He decided to revert to entrepreneurship and is currently an investor in SMEs in Middle East and North Africa (MENA), consultant and mentor in entrepreneurship, SMEs development and IP commercialisation he also delivers lectures in entrepreneurship and Ideation mind mapping. Jamal studied at King Fahad University of Petroleum and Minerals (Saudi Arabia), University of Liverpool and Durham University (UK) for his PhD. He currently is working for Waed, Aramco. Waed is the national entrepreneurship center in the Kingdom.

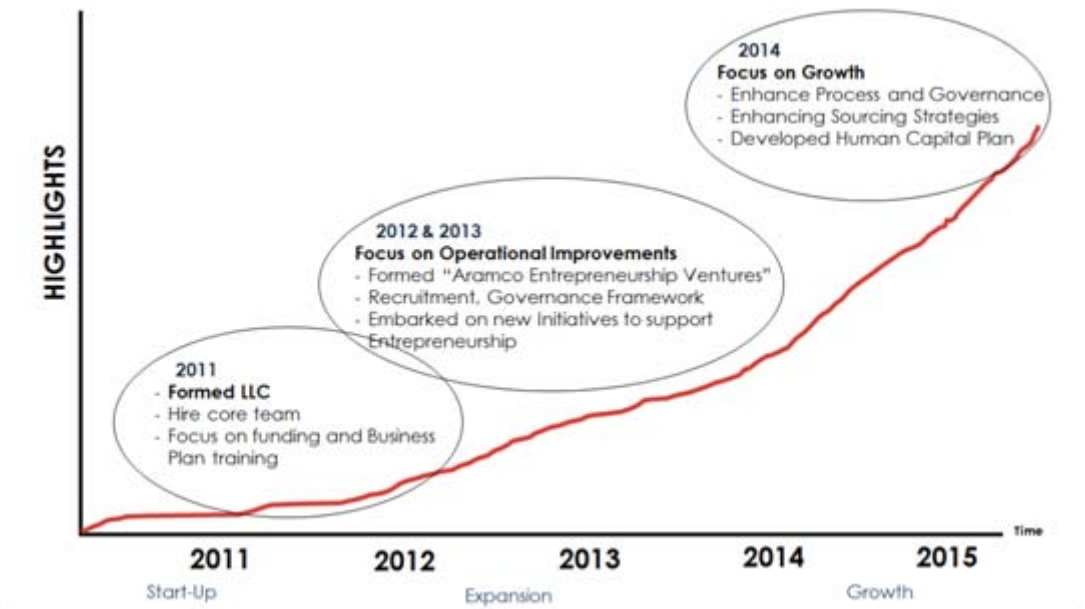


Figure 1 The Journey of Entrepreneurship - three stages. During initiation stage, the focus was on offering training, loan and education to develop effective business plans. The program was sustained by structural development in phase II, and is growing in the phase III

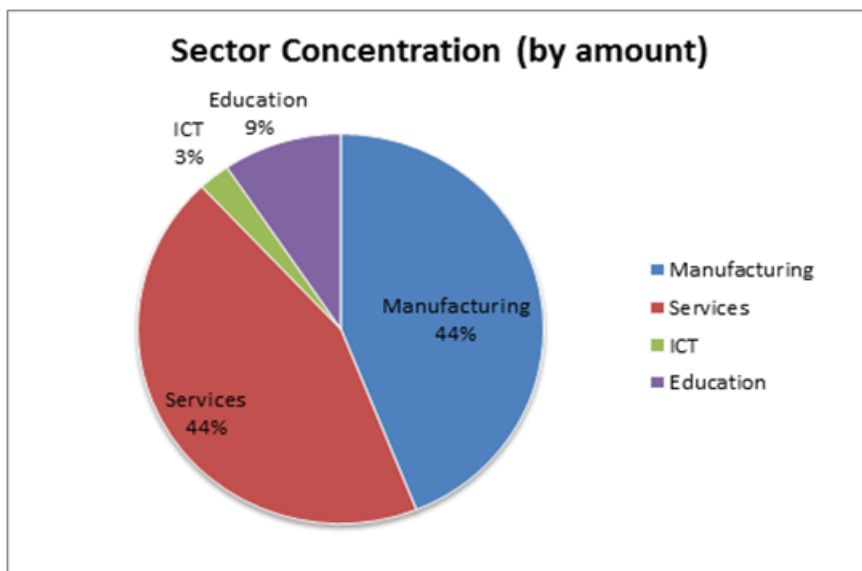


Figure 2 The Journey of Entrepreneurship. During the early stage the focus of our funding was Local Manufacturing, with 44% of the funds being deployed



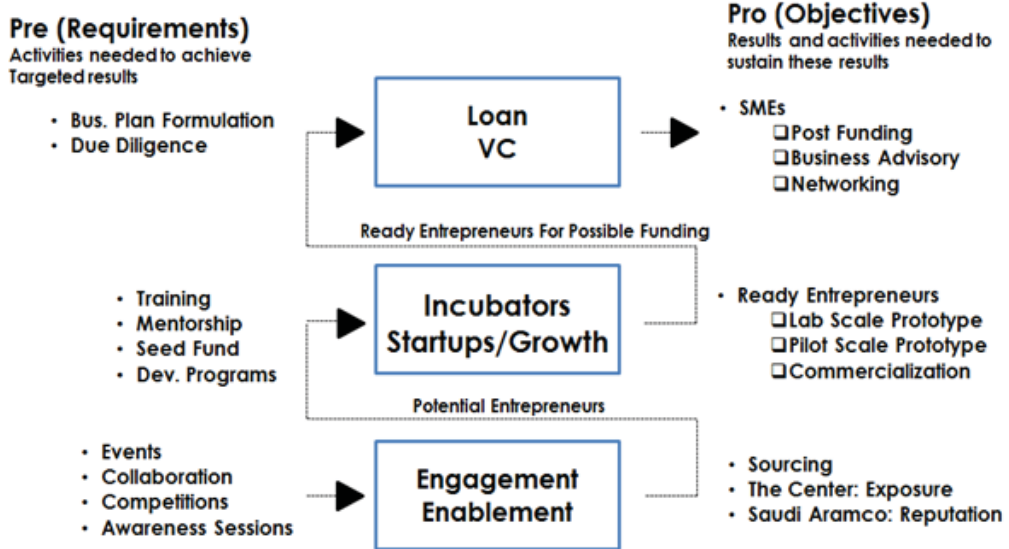
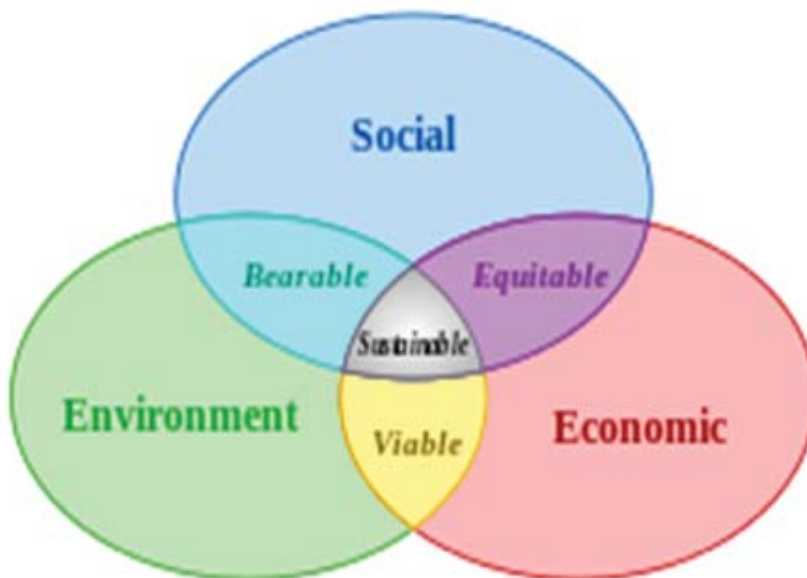


Figure 3 The journey of the entrepreneurship centre focused on three core structural elements, which are (a) Engagement, enablement and enhancement of current services, (b) Incubation and enhancement of support to start-ups and growth of the SMEs and (c) Enhancement of support to start-ups and growth of the SMEs and (c) Enhancement of financial and post-financial support



Source: Adams (2006).

Figure 4 Sustainability is a function of Social, Environmental and Economic wellbeing. Diagram is developed by ref. The system is only sustainable where all three factors are satisfied



Figure 5 Development of a knowledge-based economy requires appropriate infrastructure including enabling policy, finance, it system which serve as a foundation for cultivating an ecosystem (9)