



Evaluating the Effects of Strategic Planning on IT Higher Education in Saudi Arabia by the Perspective of Students

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ABSTRACT

According to the main strategic document in Saudi Arabia, Strategic Vision 2030, one of commitments is to continue investing in education so that young people are equipped for the jobs of the future. Currently, in Saudi Arabia there is no clear picture about the influence of that proclaimed strategical focus to the reality in public education, specifically in IT studies. Based on an empirical investigation in IT universities in Saudi's capital city Riyadh, this paper reveals characteristics of the IT studies and its alignment to the job market needs, from the perspective of students. The research is conducted among students at the final years in public universities with IT department in Riyadh. Primary data is obtained by on-line survey, individual interviews and focus group discussions. Research findings showed that strategic planning decisions made by public authorities during previous years strongly influenced the part of the higher public education of information technology in Universities in Riyadh. It confirmed that large investments in education have yielded results in a high students' satisfaction with: a) faculty equipment (education tools, libraries and computing facilities); b) computer-based labs where research and hands-on activities are performed and c) the high level of applicability of the knowledge and skills gained during the study. Graduated students are flexible and ready to accept the job either in private or public organisation, with flexible working options or as lifetime employments. However, there are still low interests of students to build own business through entrepreneurial activities and they are relatively low interested to study, build career and live outside of Riyadh and other big cities in the country. According to student's opinions, there is space for modernization and innovation of the study curriculum through the use of interactive software applications and e-learning.

INTRODUCTION

With increasing population and with over 50% of the country's population under the age of 20, education system in Saudi Arabia has to provide proper education opportunities at all stages. Therefore, in 2008, the national plan to adopt information technology across the country has been introduced. It was based on the Ministry of Education's previous projects that represent a positive change from traditional way of teaching and learning to the experiential, experimental and observable education methods. The projects stimulated development of school libraries into 1500 learning resources centres, integrated in the teaching and learning process in order to create rich learning environments, also, computer-based labs for experimentation and hand-on activities, usage of interactive software applications associated with computer sensors, establishment of digital technical centres aimed to meet educational needs in particular areas in terms of digital content and information technology application in education (Ministry of Education, 2018). Among others, the plan recommends implementation of e-learning and distance learning, and their prospective applications in higher education (Chanchary and Islam, 2011).

In 2016, the Vision 2030, Saudi Arabia's key platform and the starting point for strategic planning in all areas in the country was established. Vision 2030 sets out ambitious and specific targets for diversification and improving and, with previous development strategies, include core priorities such as alternative sources of government revenue, reduced dependence on public spending and an expanded role for the private sector in the economy, in terms of GDP growth driving and in creating new job opportunities (Kinninmont, 2017). Based on the Vision 2030 as a roof document that provides general direction, The Council of Ministers of Saudi Arabia (2018) identified many topics important for educational system in Saudi Arabia. The first is that education builds positive moral beliefs and children's characters from an early age. The focus is on the values of initiative, persistence, social skills, cultural knowledge and self-awareness. The following is the importance of the parents' engagement in their children education, putting a clear goal by 2020 to have 80 percent of parents to be engaged in school activities and the learning process of their children ("Irtiqaa" program). The platform further includes support to teachers by proper trainings, raising their awareness of the importance of communication with parents and providing them with



effective methodologies. Vision 2030, also, recommends collaboration with private and non-profit sectors insuring innovative educational programs and successful academic partnership. It is necessary to provide help to everyone to acquire the necessary learning for working, preparing young men and women for the jobs of the future. One of goals of Vision 2030 is to help guide students to make careful career decision facilitating them through different educational pathways. Success is monitored through the tracking of various goals including comparison to global education indicators and specific targets such, as for example, to have at least five Saudi universities among the world top 200. In addition, Vision 2030 clearly emphasizes “a thriving economy provides opportunities for all by building an education system aligned with market needs”. In order to ensure that the outcomes of the education system are in line with market needs, the National Labour Gateway (TAQAT) was launched, while the plan is to establish sector councils that will precisely determine the skills and knowledge required by each socio-economic sector. Kinninmont (2017) emphasized that Vision 2030 envisages a Saudi Arabia made up of citizens who are more active and independent, better educated and more capable of critical thinking, while Al-Mousa (2010) added that The Kingdom of Saudi Arabia places great emphasis and importance on education which is especially important for the future generations. Ministry of Education has clear objectives including admission opportunities to students, development of the criteria needed for the selection, teachers’ qualification, educational buildings and facilities, postgraduate programs, private education, scholarships to talented students, knowledge exchange, education funding resources, local and international partnerships etc. Ministry of Education’s compiled general objectives of education, performance measurement indicators and challenges faced by education. These challenges include the following: partial lack of education programs, weak educational environment, overuse of classical methodologies, weak curriculum quality, lack of teachers’ assessment skills, lack of students’ critical thinking skills, negative stereotyping about the education profession, incompatibility of educational outputs and labour market requirements and lack of investment in private education. From a high-level view, the focus should be on studying the ideas in each way, combining them in order to improve the outcomes of education in Saudi Arabia.

This study seeks to address the potential gaps between students’ estimation and expectations and perceptions of the public authorities responsible for high education in the country. The ambition is to use the results of the study to analyse strength, weaknesses, opportunities and threats (SWOT) of the current public education practice, as a part of strategic planning process. Final set of recommendation provides insights that support educational policy makers and future researchers, all with an aim to improve the quality of higher education in Saudi Arabia. Although the universities seem to comply with the government’s policies

and producers with regards to IT higher education, it is still unclear whether this is reflected to the students. Therefore, the study is aimed to provide an insight of the impact of strategic planning to the IT higher education in Saudi Arabia, viewed from a student perspective. Information is gathered from students at the final years of IT studies on universities in Saudi’s capital city Riyadh. It follows to immediate insights about current practice at IT studies on public universities, including main characteristics of the IT studies and insights about alignment of education system with the requirements of job market. Revealed insights are in the area of quality of program curriculum, teachers, manner of teaching, equipment and tools. In addition, the study provides a clearer picture about adjustment of the current model of IT studies at universities in Saudi Arabia with strategic aim to have knowledgeable and motivated graduated students ready to answer on dynamic market needs. Finally, the study explores potential divergences among universities and other cross-sectional discrepancies.

LITERATURE REVIEW

The knowledge about strategic approach in planning is a starting point in understanding its usage in the public organisation, including field of public education. Therefore, the review of the literature has attempted to provide a comprehensive view of strategic planning, public services and higher education, specifically in the area of information technology, by providing different opinions and practice in those fields. In addition, it includes some additional topics important in order to support overall understanding of the area of study - systemic knowledge management, effect of globalisation, state and market mechanisms in public education, impact of technology and similar.

Strategic Planning

Hax and Majluf (1990) determined strategic planning as the process by which organizations determine a long-term direction, formulate, and implement strategies to accomplish long-term objectives taking into account relevant internal and external environment. Bryson (2011) defined strategic planning as disciplined effort to produce fundamental decisions and actions that shape and guide what an organisation is, what it does, and why it does it, while Micalat (2005) determined strategic planning as zeroing in on decision-making, information, and the future. In addition, he emphasizing importance of consideration of current decision alternatives based on available information in the light of their probable consequences over time. Paris (2011) argued that strategic planning is a structured approach to anticipating the future and exploiting the inevitable, in sense of establishing major directions and concentrating resources accordingly.

Strategic Planning in Public Sector

Since 1960s, strategic planning has been applied in various public services as a response to the high demands of ever-

changing social life because of technological development, globalisation and scarcity of public resources (Poister et al, 2013; Bryson, 2011). Early studies of public strategic planning focused mainly on understanding of different practices of public strategic planning in different organisational contexts, difficulties and challenges in applying strategic planning, the role of strategic planning in the creation of public value and the role of strategic planning in network governance at different levels of government (Joyce et al, 2014). Pollitt and Bouckaert (2011) noticed that many governments that adopt strategic planning in order to apply in public organisations demonstrated limited or no success at all, where Joyce et al. (2014) argued that public strategic planning officials has to understand the difficulties and challenges before the implementation of strategic planning in the public sector. Alford (2001) noticed that goals-oriented approach appears as inadequate in the light of growing complexity and flexibility of public service organizations where it is necessary to offer logical incrementalism in order to suits the ambiguity, uncertainty and changeability of purely public situations. Although some authors argued that strategic planning has been used in various public sector agencies and it had not been effective (Poister and Streib, 2004), the concept of strategic planning and instruments associated with it have been widely adopted by public organizations at all levels of government (Bryson et al, 2010; Rigby and Bilodeau, 2013).

From the perspective of public organisation, Bryson's (2011) defined strategic planning as a disciplined effort that includes fundamental decisions and actions that shape and guide an organization is a proper determination of strategic management planning. Favoreu et al (2015) argued that strategic planning in public sector should involve combined approach of rational, collaborative and political decision-making logics, all in frame of a planned and incremental development process. Rational approach emphasized strategy primarily as structured and organized process that implies rational approach, objectivity and effectiveness of the strategic choices. The political approach in strategic planning in public sector is almost the opposite from the previously explained and it underlines limitations of the intellectual ability and cognitive biases. In addition, the limited amount of information affects analysis of the environment and issues and the potential solutions. Finally, collaborative formulation of the strategic planning in public sector combines necessity to have an organised and structured process, but also includes dynamic interdependence and relationships of different organisation and multiplayer groups, public and private. Similar to this, Bert (2017) argues that strategic planning can contribute to positive outcomes but under some conditions such as necessity to link plans to political decision-making, by involvement of lower-level staff, citizens, "creators" as team members and ensuring that strategic planning is considered useful by team members. Figueroa (2017) argued that dynamic social environment and growing expectation from all stakeholders involved required a permanent reconciliation of the legislation aimed to optimize the use of existing public

resources and to achieve expected results. For example, in order to keep budget stability and achieve expected performance, in Italy legislation regulates redistribution of the public agencies' human resources across administrative departments, precise requirements for the hiring of staff and involves various forms of flexible work as in the private sector. Similar to this, Cummings (2015) elaborated the topic of what motivates public sector workers to be more creative, innovative and to work entrepreneurially. He found that new, more effective approach to engaging public workers in a reform requires a shift from predesigned programmes, often promoting international best practice, to more experimental approach wherein they have a role of a facilitator, establishing conditions for local partners and encouraging entrepreneurship and innovation. In order to improve public organization performance, Pollitt C. and Bouckaert (2011) proposed to increase political control of the bureaucracy by giving priority to make savings, promote flexibility and innovation, motivate staff and promote cultural change, as well as to reduce burden of internal scrutiny and associated paperwork, develop more partnerships and contracting out, increase effectiveness and promote open government and transparency.

Strategic Planning in Public Education

Global organisations such as UNESCO and its part UNDP (2011) emphasized that public educational planning and educational policymaking are closely interconnected. Considering this complexity of the state – education relationship, Burbules and Torres (2000), argued that educational agenda often needed local responses in order to balance public education and pure market mechanisms (favoured from the business sector) that frequently intended to regulate educational polices and models. Haddad (1995) determined that, in spite of the fact that rigid centralized planning has now proven as inappropriate, data collection, identification of the challenges, evaluation of the programs and determination of the future activities are still very important in education planning. Bingham and Wise (1996) found that successful implementation of reforms depends on the ability of managers and leaders to disseminate information about the change and persuade employees of the necessity of change. Denhardt and Denhardt (1999) stated that the quality communication between local government managers and other stakeholders is necessary for developing support for change. In addition, local government officials have to ensure support from other entities, such as political or private organizations, or international and non-government institutions to verify and communicate the need for change. Abramson and Lawrence (2001) added that the changes have to be shaped into a vision that is transformed into a strategy with clear and understandable goals and a plan for achieving.

Tromp and Ruben (2010) considered strategic planning in higher education as particularly challenging due to relatively

less tools available for leaders to set, communicate and implement the strategy. They described strategic planning as the process of establishing priorities and goals and coordination of the efforts in order to anticipate, direct, and manage change. Ideally, the planning process includes simultaneously look back and look ahead in order to articulate future strategic directions for the university. Based on empirical researches, Wilson (2006) encouraged an approach where strategic planning should be both communicative and participative. Similar to this, Sevier (2000) emphasized importance of broad engagement of the faculty and staff in exploring questions of purpose and direction, especially in situation where the staff intuitively understand the need for strategic thinking but they are often unsure what strategic thinking really is, what will be the benefit and what will be starting point. Strategic planning process in higher education is often upheld by different self-assessment processes such as the preparation for accreditation visits (Dodd, 2004) and award applications (Ruben et al., 2007). Tromp and Ruben (2010) created a framework for strategic planning in higher education that can be applied regardless of the size or structure of the organization. The framework consists of seven planning phases: determination of mission, vision, and values (1), identification of the major stakeholders and their needs and expectations (2), consideration of assumptions and potential challenges in the social, economic, political, regulatory, technological and cultural environment (3), Identifying the organization's high level ambitions (4), formulation of the specific, detailed action plans (5), creating a document that clearly articulates the organization's plan and help in communication and guidance throughout the organisation (6), and establish meaningful measures for monitoring outcomes and milestones (7). Tromp and Ruben (2010) argued that a critical need is to translate effectively the plan into practice and emphasized the importance of commitment of all stakeholders that can be achieved by proper leadership, communication, attention to culture and assessment – leadership that will insure collective engagement in planning, implementation and change, communication that will support and interest in the planning process, assessment that promoting the role that evaluation has in successful change, and culture as the foundation related to the organisation's history, traditions, as well as understanding of habits and the natural resistance to change.

RESEARCH METHODOLOGY

Research study considers data gathered from both primary and secondary sources. The first information source is data collected by surveys among students on final years at IT universities in Riyadh, while the second information source is official government and universities databases, primarily governmental agency under the Ministry of the Education. Research study considers data gathered from students at final years of the IT study at universities in Riyadh. At initial

stage, in order to achieve understanding of the parameters and variables of the research and gain proper focus, it is used exploratory research methods - a process of collection qualitative data by preliminary interviews to identify or check main areas of interests. At the next stage, two focus groups discussions provided is conducted in two groups, since there are two separate objectives intended to be achieved by the research. Information from group discussions is used to identify relevant themes that emerge from the discussion to refine the questionnaire for the on-line survey. In addition, qualitative data gathered on this way enables non-statistical analysis, according to key words and phrases.

For the quantitate data collection it is used on-line survey, with primarily intention to include a larger number of students and to generalize some findings in the final discussion. The target population consists of all students at final years (4th and 5th year of the study) at public universities in Riyadh that have IT department. There are three such universities in Riyadh, out of 25 universities in the country. In addition, there are 13 private universities in the country, six of them with IT department, which are not the part of this study research. This research study includes all IT student from public universities in Riyadh and therefore the sampling frame is equal to the total census. According to sampling plan, the research included students from the following universities: Imam Muhammad Ibn Saud Islamic University, King Saud University and Princess Nourah Bint Abdul Rahman University (Table No.1). On-line questionnaire is sent to 155 students who belongs to IT department on public universities in Riyadh, while 92 have forwarded their responses to the questionnaires. This represents about 59.36% of the total sample, which is considered a reasonable response rate. Data is collected by a self-administered questionnaire consists of both open-ended and closed questions. For most questions, it is applied summated rating scale (Likert scale, from 1 to 5) as one of attitudinal scales that measure the intensity of respondents' attitudes towards the various aspects of the study. This summated rating scale help to place different respondents in relation to each other in terms of the intensity of their attitude towards a specific issue.

Table 1. Survey Population Structure per Universities

University Name	Number of Students
Imam Muhammad Ibn Saud Islamic University	19
King Saud University	46
Princess Nourah Bint Abdul Rahman University	27
Total	92

The qualitative–quantitative–qualitative approach enables qualitative methods to determine the diversity, quantitative methods to quantify the phenomenon and then going back to qualitative methods to explain the observed patterns.

Namely, conducting on-line survey and applying proper analysis afterwards, there is the opportunity to gather some facts and to generalize certain findings, although with geographical and functional limitations. Outputs from

individual interviews and group discussion are qualitative data about participants' views, thoughts, and experiences. The sequence of data collection activities is shown at Figure No.1.

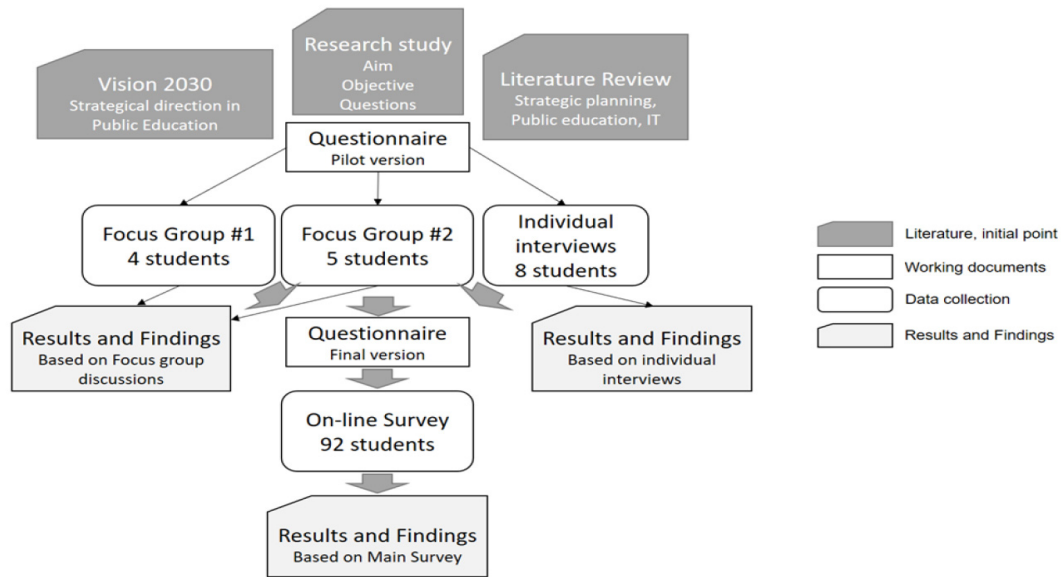


Figure 1. Sequence of data collection activities

RESEARCH FINDINGS

Findings and discussion from the questionnaire

Students rated the faculty equipment (education tools, libraries and computing facilities) as the best features of the IT studies (Average weighted response is 3.87). Sufficiently incorporated computer-based labs for experimentation and hand-on activities is most valued characteristic of the teaching process (3.77), followed by the high level of applicability of the knowledge and skills gained during the study (3.47). Next two features of IT study with moderate good rates are the quality and standards of the study curriculum and the statement that the teaching process includes experiential,

experimental and observable education methods (3.26 and 3.24 average weighted response, respectively). Next four features of the IT studies are considered by students somewhere in the middle, with major of responses “Neither agree nor disagree” and with average weighted response about three. According to students inputs, the IT faculties provide certain opportunities for international practice and knowledge exchange (3.09), the manner in which students are taught is moderate participative and includes to some extent modern pedagogical methods (3.08), the teachers are partially trained to transfer the knowledge (3.04) and the teaching process incorporates some interactive software applications (3.03).

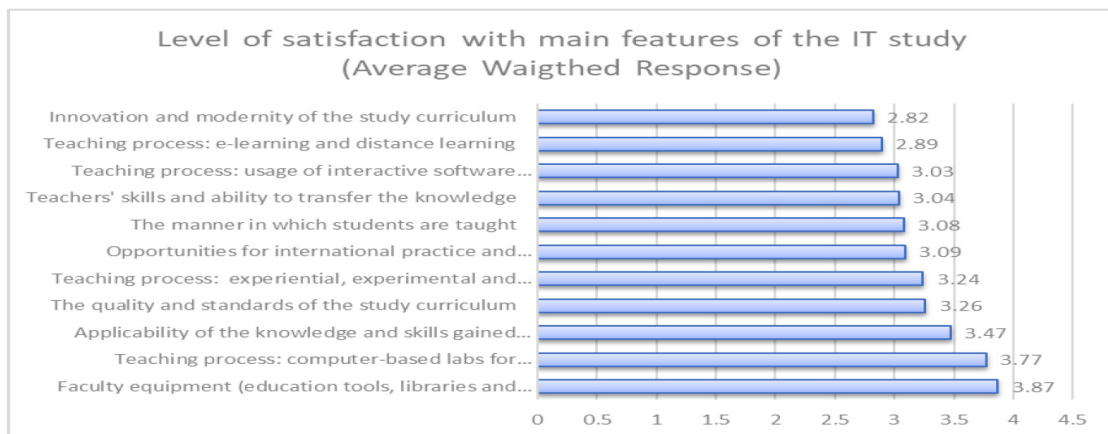


Chart No.1

The next part of the survey aimed to gather relevant data in order to estimate potential of the current model of IT studies in frame of strategic intention to have flexible graduated students ready to adapt on dynamic market needs. Therefore, this section represents results of the survey related to the

flexibility and adaptability of the graduated IT students, through the estimation of unemployment time period after graduation, preferred sector for employment after graduation, preferred type of employment and preferences regarding geographical location.

Students expect that time needed for the time necessary for the first employment after graduation is approximately six months. More than one third of the students consider this period as most probable (N=32, 34.8%), while rest of students for this period consider a year (N=25, 27.2%), 3 months (N=18, 19.6%), a month (N=10, 10.9%) and more than a year (N=7, 7.6%). It is interesting that average time needed for the first job is significantly different between Imam Muhammad Ibn Saud Islamic University where students expect the job in a shorter time, than in rest of two universities where this time frame is longer.

Table 2. Estimation of unemployment time after graduation

University Name	Time necessary for the first employment				
	a month	3 months	6 months	a year	> a year
Imam Muhammad Ibn Saud Islamic University	6	3	4	6	0
King Saud University	2	9	17	14	4
Princess Nourah Bint Abdul Rahman University	2	6	11	5	3
Total	10	18	32	25	7
%	10.9%	19.6%	34.8%	27.2%	7.6%

After graduation, more than a half of students prefer to find the job in private sector (N=48, 52.2%), followed by almost one third of students who prefers public sector (N=29, 31.5%) and 15.2% (N=14) who considers entrepreneurial ventures. An important insight could be that students from Imam Muhammad Ibn Saud Islamic University are much more inclined to the public sector, in comparison to the student from King Saud University and Princess Nourah Bint Abdul Rahman University where more than a half of them prefers private sector.

Table 3. Preferred sector for employment after graduation

University Name	Preferred sector			
	Public	Private	Entrepreneurial	Not valid answers
Imam Muhammad Ibn Saud Islamic University	8	7	4	0
King Saud University	14	27	4	1
Princess Nourah Bint Abdul Rahman University	7	14	6	
Total	29	48	14	1
%	31.5%	52.2%	15.2%	1.1%

Students on IT studies in universities in Riyadh do not have explicit preferences in terms of type of employment. In general, a slight majority prefer flexible working options (N=36, 39.1%), while 29.3% of them prefer lifetime employments (N=27), with almost one-third students who are undecided in terms of this (N=29, 31.5%). As expected, only female students from Princess Nourah Bint Abdul Rahman University are clear for flexible working options, while responses from the rest of two universities are distributed almost equal per each type.

Table 4. Preferred type of employment

University Name	Preferred type of employment		
	Lifetime employments	Flexible working options	It does not matter
Imam Muhammad Ibn Saud Islamic University	6	6	7
King Saud University	14	17	15
Princess Nourah Bint Abdul Rahman University	7	13	7
Total	27	36	29
%	29.3%	39.1%	31.5%

Almost a half of the total number of students at IT universities in Riyadh are not ready for any relocation (N=45, 48.9%). In contracts, 40.2% of them are ready for relocation both inside and outside the country (N=37), while some of them are ready for relocation just inside the country (N=8, 8.7%). Although is distribution of the responses is fairly equal for both of the main options, it is noticeably that more than a half from Imam Muhammad Ibn Saud Islamic University are ready for relocation both inside or outside the country, while at the rest of two universities this proportion is opposite.

Table 5. Preferences regarding geographical (re)location

University Name	Relocation preferences				
	Not ready for any relocation	Ready for relocation inside the country	Ready for relocation outside the country	Ready for relocation both inside or outside the country	Not valid answers
Imam Muhammad Ibn Saud Islamic University	7	1	0	9	2
King Saud University	24	4	0	18	0
Princess Nourah Bint Abdul Rahman University	14	3	0	10	0
Total	45	8	0	37	2
%	48.9%	8.7%	0.0%	40.2%	2.2%

Findings and discussion from the individual interviews and focus groups

Students from IT universities in Riyadh are moderately satisfied with IT studies. They are particularly pleased with students house and services availability, as well as different programs and teachers’ linkage with big companies, while space for improvements they see in enhanced way of teaching, intensive trainings for the teachers, opening of new training centres and more opportunities for practice. An average student at final years on IT study in faculties in Riyadh prefers a job in private or public organisation, either with flexible working options or as lifetime employments, conditionally ready for relocation if it brings better salary and overall work conditions, expecting to find the first job in about six months after graduation. In detail, students from IT universities preferred private sector for an employment after graduation, while public sector is the second option. They do not have explicit preferences in terms of type of employment and ready for both flexible working options and lifetime employments. Some of them are ready for geographical relocation if it is necessary for career development, while others are exclusive with the opinion to stay in Riyadh or, at least, inside Saudi Arabia. Expected time for the first employment for graduated students on IT universities is within the period from three to twelve months. They are aware of the opportunities for international practice and knowledge exchange, but not all of them have equal chances to use this opportunity. There is no big interest to build own business through entrepreneurial activities. Per universities, students from Imam Muhammad Ibn Saud Islamic University are much more inclined to the public sector, in comparison to the student from King Saud University and Princess Nourah Bint Abdul Rahman University.

Discussing the significance of educational system alignments with market requirements and necessity to insure knowledge for the future jobs, an important insight is that there is a regular practice of cooperation between IT universities and private sector. Students from IT universities strongly believe that current model of IT studies support strategic aim to have knowledgeable and motivated graduates ready to accept

dynamic market needs. They believe that public universities give more opportunities and generally provide higher level of education than private universities. It is achieved by engagement of high-qualified doctors, teachers or professors, updated tools and programs and better connectivity to work requirements. However, majority of students prefer study, job and stay in Riyadh, or possibly in Jeddah. As main reason for that, they mentioned potentially higher salaries in Riyadh and big cities.

CONCLUSION

Research findings showed that strategic planning decisions made during previous years are fairly influenced this part of the higher public education, specifically the IT study in Saudi’s capital city Riyadh. The key findings of this research are as follows:

- Investments in education and training, together with rigorous curriculum standards in literacy, numeracy and skills are achieved to a great extent;
- Usage of modern education tools and approaches was realized to a limited extent through computer-based labs for experimentation and hand-on activities, experiential and observable education methods, supported by an average teachers’ skills and ability to transfer the knowledge, as well as the overall teaching process;
- Focus on innovation in advanced technologies, innovation and modernity of the study curriculum, usage of interactive software applications and the opportunity for e-learning and distance learning, together with lack interests in entrepreneurship as one of strategical determination, are the weakest part, according to research findings.

Framework implications for Saudi Arabia Public Sector

Following initially set up of conceptual framework of strategic planning in public agencies as a mix of strategic state and contingency concepts, potential research implications on strategic planning framework for Saudi Arabia’s public organizations are shown in Figure No.2.



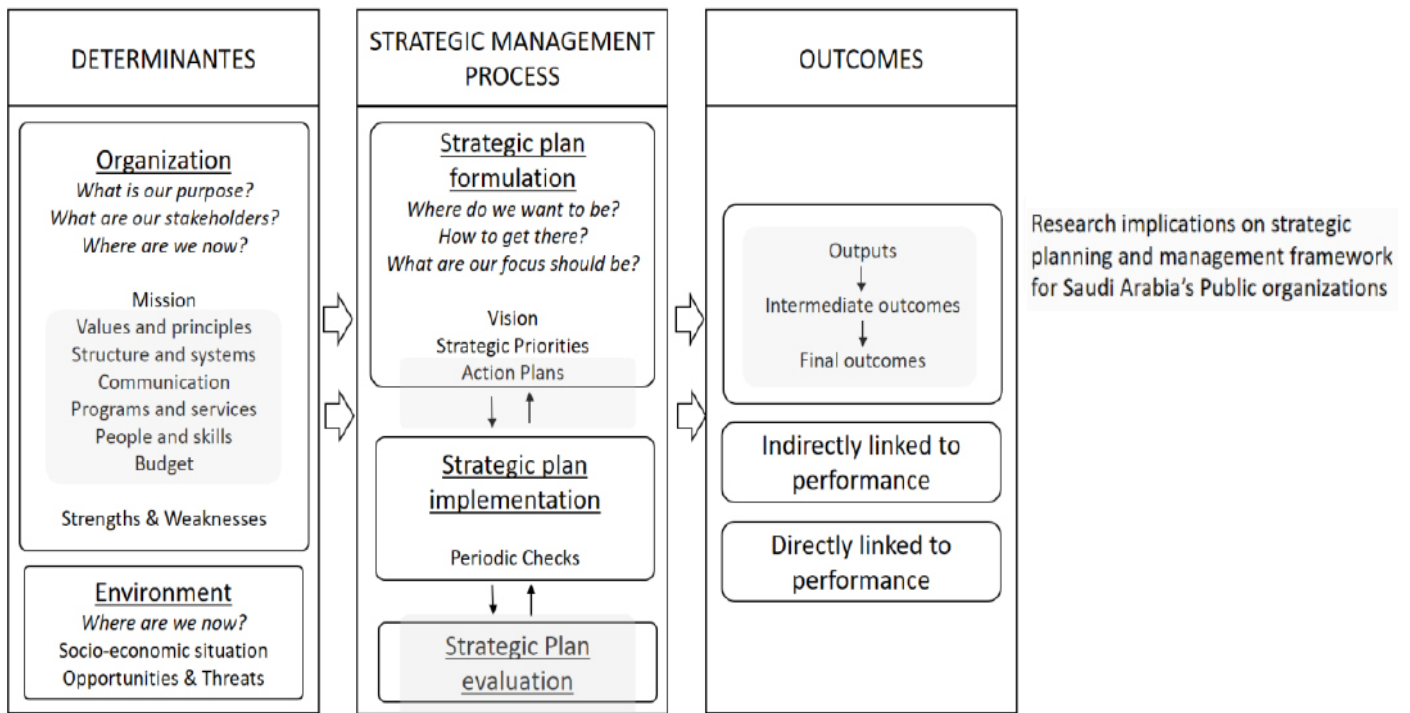


Figure 2. Strategic planning process in public organizations – Framework implications for Saudi Arabia Public Sector (Adapted from Poister, Pitts and Edwards, 2010; Paris K.A, 2011; Pollitt C, Bouckaert G, 2011)

It starts from Saudi’s national long-term vision-based strategy that identify the strategic position and direction and combine different environmental and organizational determinants that influence outcomes of public strategic planning process. Strategic position is influenced by the

environment and resources availability, but also by a complex influence of people in different roles. It is expected that research findings also will help in focusing at most critical points in future strategic planning, primarily in higher IT public education.

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Equipment of the faculty facilities, education tools, libraries and computing facilities • The quality and standards of the study curriculum • The knowledge and skills gained during the study are high applicable • Students house and services availability • Different programs and doctors' linkage with big companies, • Students' motivation is on high level based on a strong belief that current model of IT studies support strategic aim to have knowledgeable graduates ready to accept dynamic market needs 	<ul style="list-style-type: none"> • Level of innovation and modernity of the study curriculum • Level of usage of interactive software applications and the opportunity for e-learning and distance learning
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Improvements on preparatory level of IT study • Better usage of computer-based labs for experimentation and hand-on activities, experiential and observable education methods • Students preferences regarding private sector employment, with public sector as second option • Students readiness for both flexible working options and lifetime employments • Students relatively optimistic expectation regarding the time for the first employment after graduation - within the period from three to twelve months. • Students from IT universities in Riyadh are moderately satisfied with IT studies • improvements based on enhanced way of teaching, intensive trainings for the teachers, opening of new training centres, updated and innovative curriculum and more opportunities for practice 	<ul style="list-style-type: none"> • Teachers' skills and ability to transfer the knowledge, the manner in which students are taught and the overall teaching process that includes • Students partially readiness for geographical relocation if it is necessary for career development, with an considerable number of them who are exclusive with the opinion to stay in Riyadh or inside Saudi Arabia • Students are aware of the opportunities for international practice and knowledge exchange, but all of them do not have equal chances to use this opportunity • Differentiation among three faculties from which the students who participated are not so big, but it they do exist, especially in terms of level of satisfaction, job preferences and some expectations regarding post-graduated period

Figure 3. SWOT Analysis of the higher IT public education in Riyadh – Framework implications

Framework implications for Saudi Arabia Public sector, specifically in the area of higher IT education are expected through consideration of strengths, weaknesses, opportunities and threats (SWOT) of the current public education practice from the perspective of students at IT universities in Saudi's capital city Riyadh. The overall intention is to use this SWOT analysis as a relevant source for the strategic capabilities diagnosis in future strategic planning model development that area of public education.

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