Chapter 5
Learning to Innovate by Connecting Interprofessional Judgement – Exploring the Digitised Creative Sector in the Gulf

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Abstract In this chapter, we first provide a circumscribed review of the creative sector as a potential employment-creating sector, specifically in the digitised creative segment in Iran, Saudi Arabia and United Arab Emirates. Whilst acknowledging the previous work on the Technical Vocational Education and Training (TVET) systems and the increased entrepreneurship education efforts in these countries, we focus on the learning and upskilling required for innovating in the nascent creative sub-sectors, such as digital marketing and advertising (e.g. mobile value-added services (VAS)); media and entertainment (e.g. television and film, and gaming); and digital commerce (e.g. start-ups and new technology based firms (NTBFs)). Our geographical focus remains on the context of Tehran, Jeddah (and Khobar), and Abu Dhabi and Dubai. Secondly, exploring the in-situ learning episodes within a conceptual model, created via primary and secondary data sources, we point to the prominent use of skill webs as means of in-project upskilling and a resource for development of inter-professional learning and judgement capability which forms a core ingredient for innovation. Lastly, the final section briefly points to recent policy vistas and concludes.

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1 New Sectors and Employment in the Gulf[1]: A Glance at Iran, Saudi Arabia and the United Arab Emirates

1.1 The Context: A Mismatch in Education and Training (And the Potential Demands of Sector-Specific Growth Engines)

This section sets the contextual scene, in a brief and thus circumscribed manner, before moving in the following Sect. (1.2.) to look at the features of the digitised creative sector. The next Sects. (2.1. and 2.2.) deal with issues of enterprise-based processes of workplace learning and development, and rapidly zoom in on the issue of interprofessional judgement, including a brief conceptual discussion. The last Sect. (3.) concludes by exploring three factors in policy and programme design (and re-design), whilst pointing towards the new vistas in policy.

There is much written and broadcast in the journalistic realm, often with a geo-political twist, and an increasing volume in consultancy reports broadly about the Persian Gulf region, yet relatively little robust material is directed at the specific economic and sustainable development requirements. So whilst the long-term policy aim of economic diversification is a near-constant priority rhetoric, little coherent and consistent attention has traditionally been paid to new sectors with the overhaul of an industrial policy, such as the creative sectors, in Islamic Republic of Iran (IRI), Kingdom of Saudi Arabia (KSA) and United Arab Emirates (UAE). That (often incidental) policy and practice oversight is however changing.

Within the recent years, Iran, KSA and UAE, emerging as key regional actors, are actively seeking ways to secure their economic futures, looking East as well as West, and beyond their hydrocarbon assets: these include designing and formulating more cohesive and implementable policies to build an ability for entrepreneurial innovation to drive their economies in line with international best practice (OECD 2010a, 2013a, 2014), and in parallel, enhance their citizens' skills for competitiveness, in spite of chronic educational, skill and employment challenges.

There is a robust body of evidence accumulated over the last three decades indicating that innovation, and the skills to learn to innovate, building upon workplace learning and commercial purpose of projects, enhanced by education and lifelong learning (LLL), are of paramount importance in nations' economic development. This is equally well understood and captured in a succession of recent development plans and national strategies of Iran, Saudi Arabia and United Arab Emirates.

The genesis of this chapter was a presentation and animated discussions on the *crisis* of youth employment issues (and in some cases, 'yester-years' youth' of under 35, still struggling within the system) held at, and hosted by the University of

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[1] The historically steeped term of Persian Gulf, originating from the Greeks and the newer term of Arabian Gulf, based on Pan-Arabism ideology of 1960s are the full official terms currently used respectively in Iran and Gulf Cooperation Council (GCC) States (e.g. KSA and UAE), to refer to the same waterway/region.

Cologne in autumn 2014, examining a number of globally emerging patterns. Whilst there were clearly many similarities with the global position, both on employment including unemployment, under-employment and mismatching of skill issues (Schleicher 2014; OECD 2010b, 2013b), and an acknowledgement of the diversity and challenges of TVET systems globally (Bosch and Charest 2010), a few unique challenges were also identified, specific to the countries in our focus.

As an example, whilst it should be highlighted that, based on dedicated local and national level work in the last five years, assisted by UNESCO and UNEVOC, the renewed brand and image of the TVET systems in the three countries have been somewhat elevated, the legacy of the systems in the perception of many employers, parents and young people themselves, remains problematic. As a landmark World Bank report commented, within the region, TVET has traditionally been viewed as:

> The 'poor cousin' of the education family… (and regionally, have been) relatively unsuccessful in linking training with employment… (furthermore, as) VET is usually the reserve of those who have not done well in compulsory education, many students do not have a firm grasp of the basic skills necessary to learn more challenging technical competencies… (and thus, it) largely fails to put students on a clear pathway to further education and training options. (Galal 2008, p. 93)

Furthermore, three early caveats are worth front-loading here: Firstly, Iran, Saudi Arabia and UAE in the last decade and half, have witnessed a massive rise in the provisions of their higher education and as such, many university and polytechnic/ further education colleges' graduates now compete in the school-leavers' labour market and talent pool. Whether the quality of the expanded higher education sector has kept-up with its quantity; whether the choice of courses of studies offered has been congruent with the needs of the labour market; and how far of a decoupling between education and economic growth[2] now exists, are all open debates.

Additionally, consider a recent empirically-robust argument (using longitudinal and big-data tools) in development economics advocated by Harvard University's Centre for International Development, highlighting that:

> As is often the case, the experience of individual countries is more revealing than the averages. China started with less education than Tunisia, Mexico, Kenya or Iran in 1960, and had made less progress than them by 2010. And yet, in terms of economic growth, China blew all of them out of the water. (…) (Hausmann 2015, p. 22). Furthermore, (…) there is more bad news for the 'education, education, education' crowd: most of the skills that a labour force possesses were acquired on the job. What a society knows how to do is known mainly in its firms, not in its schools. At most modern firms, fewer than 15 percent of the positions are open for entry-level workers, meaning that employers demand something that the education system cannot – and is not expected – to provide. (Hausmann 2015, p. 23)

Secondly, whilst there are existing surveys of the TVET and LLL systems, both regionally (Galal 2008) and in the three countries (UNESCO-UNEVOC 2014; for a recent commentary see Baqadir et al. 2011), we have attempted to steer in a different,

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[2] Robust and up-to-date data on the link between education and economic growth within the three countries is hard to pin-down: for a historical analysis (1960–2003), covering the larger region, and aggregated data, of Middle East and North Africa (MENA), pointing to a weak link, refer to (Galal 2008).

and in our view, potentially more generative direction. Thus in this chapter, it is not our intention to address 'macro' education and economy's links, including in TVET and higher education, reforms and policy implications, but rather wish to open a preliminary dialogue and reflection, by looking at new sectors and the associated changes in work arrangements (instead of the 'legacy' education and training systems, within existing sectors), based on the specific focus of our study.

Our third caveat, again based on the specific sectors under exploration is to background the national systems and wherever possible foreground, and thus focus more on the local city-wide and regional ecosystems based on the enterprises in practice, specifically at Abu Dhabi and by natural sectoral extension, Dubai, UAE; Jeddah (and a glance at Khobar), KSA and Tehran, Iran. Lastly, we do not claim finality on our current perspective for the five city regions, as our work on a sector-specific empirical level remains in-progress[3].

Condensing a range of *macro-meso-micro* level policy issues, we highlight that three overarching strategies are actively at play, whilst being contested, debated and promoted at the national, regional and sectoral levels of the three countries explored: these national strategies can be themed across three strands as:

- Diversification of the economy, whilst retaining stability;
- Technological 'catch-up' and development; and
- Labour market restructuring, enhancing sustainable private-sector job-creation.

These strands are highly interconnected and sensitive to market demands and perceptions. At times, stability needs to be re-injected (by the State) to retain the system's balance and avoid too blatant of 'market-failures'. A core notion, underlying these strands is to build-up the national capacity and improve the prospects of national competitiveness. Equally, there is an increasingly visible policy acknowledgement, at all levels of the political echelons of the three countries that new sectors which have the potential to generate new private sector jobs, and thus reduce and relieve the burden of unemployment, particularly in the 'educated young', are in need of developmental assistance, in an effort to build a sustainable job-creation pipeline. This is particularly intense where there is a demographic youth bulge (such as in KSA and UAE). In short, whilst the state is still the key *enabler* and to a large extent, the *provider*, it cannot remain so indefinitely. Therefore the role of the private sector and small and medium sized enterprises (SMEs) and within that, the fast-growing NTBFs and their potential in offering a lion's share of future decent jobs is under policy spotlight. Furthermore, whilst manufacturing has traditionally been viewed as the bastion of industrialisation (and thus, 'progress') in these countries, it is now the service sectors that acts as the firm- and employment-creation engine, and offers a more secure mechanism to the potential of higher value-added growth path (potentially by linking to a global value-chains (OECD 2013c)).

In line with international policy trends, innovation and entrepreneurship, and by extension educating for innovation and entrepreneurship, is starting to be consistently

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[3] For an update, please consult the project's microsite at reignitinginnovation.com.

promoted. In this policy domain within the region, a range of policy tools, instruments and metrics (such as longitudinal data offered by World Bank's *'(Ease of) Doing Business',* the *Global Entrepreneurship Monitor* (GEM) project, and World Economic Forum's innovation indicators and *Global Innovation Index*, embedded within their annual *Global Competitiveness Report*) are drawn upon both by comparative researchers and policy analysts.

In parallel and in line with global trends (UNCTAD 2008; Strategy and PwC 2013), policies to enhance a move towards a *Creative Economy* and as part and parcel of that, vibrant digitised creative sectors, are increasingly apparent on the three countries' *policy radars*.

Before ending this sub-section, a last point of information is called for. As descriptive data, such as national (and city-region) economic and demographic data is now readily available online, from multiple sources (World Bank 2015), we have not felt it necessary to list these explicitly. However, the following unique demographic patterns could helpfully be noted.

By the end of 2015, relatively *conservative estimates* indicate that demographics[4] of our three countries in question will be as follows. KSA's population will be around the 30 million mark, of which approximately 45 % will be female (and 55 % male, higher due to a large migrant labour force): the growth rate is stabilised at around 1.5 % per annum, and with an approximate migrant (non-Saudi) residents of 32 %. The population of UAE will be around 10.5 million mark, of which approximately 31 % will be female (and 69 % male, much higher due to a significant unaccompanied men labour migrant percentage): the growth rate is stabilised at around 3 % (whilst bearing in mind that with a population of about 3.4 million in 2004, UAE saw double digit demographic growth, primarily via migrant workers, between 2005 and 2010), and an approximate migrant (non-Emirati) residents of 88+ percent. Lastly, Iran's population is likely to reach the 80 million mark, of which approximately 49.5 % will be female (and 50.5 % male, including a small number of migrant labour, relative to the overall population): the growth rate is stabilised at 1.25 % and an approximate (non-Iranian) residents of 2–2.5 %, mainly composed of the majority Afghan migrant, and a smaller, Iraqi émigré communities. Whilst 'nationalisation' (meaning using the local workforce) is not a particular challenge for Iran, it has become a lingering policy challenge for UAE and KSA (referred to as *Emiratisation* and *Saudisation* of the labour force).

As to the city-regions within our focus, Tehran's city population is (probably under-reported at) around 8.4 million, with 12.6 million in the Tehran metropolitan area, marking it as Iran's most significant business hub and largest urban area and the largest city in Western Asia. Whilst Abu Dhabi and Dubai in UAE, and Jeddah (and Khobar, as part of Dammam-Dhahran-Khobar area) in KSA may be somewhat smaller in terms of population, each of these city-regions are ambitiously and consistently endeavouring to place themselves as the sector-specific business hubs of their region.

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[4] The data is based on consolidation of multiple sources and for the Gulf region, guided by the Gulf Labour Market and Migration (GLMM) research.

Abu Dhabi for example leads the way in terms of sectoral planning and infrastructural projects, and has increasingly placed greater emphasis on the creative sector, such as focusing on Arabic-language digital media content (Financial Times 2014b). Equally, although at early stages, Jeddah and Khobar are capacity-building for the sector (SNCI 2015) based on niche markets and solid infrastructure, including practical assistance on national-level practice and policy-borrowing from EU and Republic of Korea (SK Telecom 2015). This is couched within a background of a significant economic and sectoral diversification policy within the Saudi Arabia's future planning (Financial Times 2015; Hoteit and Tuerpitz 2015; KSA IC 2015).

Whilst the largest in terms of human resources, Tehran's industrial and sectoral policy outlook is much more organic and in reality 'bottom-up driven', as the recent years' 'top-down' sectoral plans have generally struggled to gain traction. With the relative détente of geopolitical tensions, this includes various emerging innovative service designs, enhanced by boundary-spanning interactions and sectoral expertise, and seed-financing with the technology diaspora communities via US and EU, but also lumbered with significant infrastructure, sectoral *implementable policy* and skills provision challenges (UN Iran Office 2013; Financial Times 2014a; The Observer 2015). Iran's sectoral challenges are multi-faceted including an educated, yet compared with international neighbours and standards, relatively unskilled workforce, combined with an inflexible labour market.

In the next sub-section, we briefly outline core features of the digitised creative sector, in general before turning our attention to a case vignette.

1.2   The Digitised Creative Sector in Brief

There is an increasing volume of diverse literature on the creative (and cultural) industries and sectors, including definitional differences in various countries: reviewing the field, which has also become firmly established as a global policy concept, is not our task here. Rather, we limit ourselves to noting the following: creative sectors build on widely-accepted assumptions that investment and innovation in entrepreneurial 'creative' services can generate economic return and growth, both on a city/regional level, and by extension, feed into national levels. The creative features, refers to an economic sector in which creativity, human and social capital, combine with urbanised interconnected entrepreneuriality, rather than relying on purely physical assets of land, labour and capital/finance. As the field has matured, a number of sectoral approaches have identified the digitised segment of the creative sector as a core area worthy of careful policy attention (Strategy and PwC 2013) based on its high growth potential with features of *gazelle* firms (Henrekson and Johansson 2010). As of 2015 re-classifications, the sector includes sectoral categories such as 'film, video and photography', 'music and the visual and performing arts', 'software, computer games and electronic publishing', as well as advertising, design, fashion, crafts and, museums and galleries.

It is worth pointing out however that the above classifications do not always hold strictly as in the day-to-day practice of the sector, firms frame and attempt to solve business problems by cutting-across different sub-sector specialities. Consider for example a mobile application software development project, which is funded by a bank for the dual purpose of its advertising and branding, as well as enhanced service design (e.g. in creating multi-channel service delivery for interactions with the bank, collection data-points and transactions with the client's account). Or a lifestyle website with instructional videos on Arabic cuisines and culinary, which markets niche fashion and kitchenware (craft) too, essentially acting as an advertising test-bed and gateway platform, including recommendation on music to cook, or to dine with. Convergence in technology and social trends therefore can create complex interdisciplinary and thus, interprofessional skill requirements for the project's back-office.

Added to the older discourses on creative industries and sectors, a more recent policy frame has turned towards endorsing a *creative economy*[5] concept, as a potential pathway to growth and job-creation for specific regions and cities of the developing (and developed) economies. We therefore acknowledge that both the digitised creative sector activities, and the broader creative economy concept, despite their inherent ambiguities, have started to draw the attention and interest of the policy makers, both globally and in the gulf region.

We turn next to briefly outline, in broad terms, some of working features of the nascent creative sub-sectors. For our purposes, following a brief sectoral description, we retain our attention on digital marketing and advertising (e.g. mobile VAS); media and entertainment (e.g. television and film, and gaming); and digital commerce (e.g. start-ups and NTBFs, which is currently riding on a wave of interest (The Economist 2013a, 2014a, b)), with our geographical focus on the context of Tehran, Jeddah (and Khobar), and Abu Dhabi (and Dubai). At this moment in time, our empirical data based on previous work, is a combination of primary (firm-based organisational ethnography) and secondary sources of document analysis for Tehran (Alyani 2016a), and secondary sources, policy document analysis and desk research for Jeddah and Abu Dhabi (Bhargava and Kaabi 2014; for a policy context also see Jamjoom 2012; Baqadir et al. 2011; Al-Waqfi and Forstenlechner 2014).

So as to ground our conceptual argument on interprofessional learning and judgement, we selectively draw on recent studies (Guile 2011a, b; Guile 2012a, b), where the issue of interprofessional learning and judgement within the sector, inter alia, has been addressed. Building on those earlier conceptual work, we move on to

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[5] Analysts point to the trend that other nomenclatures has in various periods of the recent decades been adopted for similar conceptions, such as the digital-/internet-economy, information-economy/-society and even bordering on knowledge economy terrains (For a discussion see Carlaw et al. 2006). Additionally, the process of digitisation is now assumed to fulfil the requirements for a general purpose technology (GPT), which can then (potentially) contain far reaching economic and societal consequences (Lipsey et al. 2005), as it has rapidly so far spread, and continues to spread, "universally through disparate aspects of production and consumption in the economy" (Handke and Towse 2013, p. 2).

provide an abridged case-vignette[6], based on a recent sectoral study of innovation and learning within the digitised creative sector (Alyani 2016a, b). As we explore, by analysing and interpreting the in-situ learning episodes on a conceptual level, via primary and secondary data sources, we point to the prominent use of *skill webs* as means of in-project upskilling and a resource for development of inter-professional learning and judgement capability which forms a core ingredient for innovation.

2 Analysing and Interpreting the Upskilling of the Creative Sub-sectors

2.1 Learning and Development in, and for the Creative Sector

Building on both policy trends and empirical observations within the sector in the United Kingdom[7], Guile (2012b, p. 301) highlights that the creative sector is characterised by:

> (a) external labour markets (i.e. contract-based) where employment opportunities emerge as people participate in occupational networks; and (b) cultures and practices that require two forms of knowledge[8], namely, vocational practice (i.e. mix of knowledge, skill and judgement) and social capital (i.e. knowledge of networks to secure contracts for employment). (Guile 2012b, p. 301)

We would now add that the latter point on social capital, and 'horizontal network participation' may well also be required to adequately fulfil the vocational practice elements, especially when the professional is met by interprofessional challenges.

Guile's study drew on case studies of young people who were

> attempting to develop the expertise, connections, and self-promotional skills to gain opportunities to work' and as a conclusion, suggested 'that policy makers should rebalance existing educational policies based on the acquisition of the higher level qualifications with policies that assist intermediary organizations (i.e., local bodies) to devise programmes that provide young people with opportunities to develop their vocational practice and social capital and to develop insights into how to deploy the latter entrepreneurially to secure contracts for their services. (Guile 2012b, p. 302)

Moving further to a specific level of *modus-operandi* within the sector, i.e. working in projects and with an interprofessional team, recent research has also highlighted the simultaneous growth and challenges of interprofessional learning (Guile 2012a, pp. 84–86). Interdisciplinary research on learning including contributions from

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[6] The earlier stages of the study was reported in (Alyani and Guile 2012). For a full description of the methods and discussions on pragmatically-oriented methodology, refer to Alyani (2016a, b).

[7] For an up-to-date UK sectoral posture see Creative Industries UK 2014.

[8] We draw a similarity here to technological knowledge in the act and process of innovating, viewed as *"at once a body of understanding and a body of practice"* (Nelson 2000, p. 66, 72).

economic geography, placed projects and the features of project-work, centre stage, as a new manifestation of workflow process management. This new workflow could also include pedagogic elements and processes.

Studies in projects, as an organising principle of workflow, depending on intra-company and inter-company arrangements, have highlighted different learning challenges. Commentating and analysing Grabher's study (Grabher 2004), Guile (2012a, pp. 85–86) highlights a few issues, which we quote at length here as it directly relates to our argument later, that:

> The primary challenge in the IT industry is to strike a balance between securing one-off ventures, which require bespoke solutions, and repeatable commissions where knowledge about software systems can be 'accumulated' and 'modularised' (i.e. codified) to assist staff to reuse extant knowledge and, in the process, keep costs down (Grabher 2004, p. 107). In contrast, (…) the primary challenge in the advertising industry as having a reputation for devising 'original campaigns' that reflect closely clients' preferences to secure new accounts (Grabher 2004, p. 107). (…) IT project teams consist of different specialisms whereas advertising companies deploy staff to work on the 'client' (i.e. liaison) or the 'company' (i.e. creativity) side of advertising campaigns. The inter-professional challenge of the former is to learn how to 'reduce' (Grabher 2004, p. 108) the differences between specialisms so members of the team can draw on one another's insights to reconfigure extant or create new software. In contrast, the latter challenge is to 'bridge' (Grabher 2004, p. 108) the different foci and concerns that exists between members of the same project team so that they can convince clients of their capability to respond to evolving needs.

It should therefore be relatively clear that the sub-sector specific circumstances and 'project-purpose' requirements, generate slight but significantly different challenges in interprofessional learning for the professional engaged on projects. With the above in mind, we turn next to highlight our case vignette in brief and within that, focus specifically on aspects of interprofessional judgement. At the start of the next sub-section, we will also provide a few definitions for our core terms to assist in the clarification and discussions, later on.

2.2 Sectoral Upskilling for Interprofessional Learning and Judgement in the Digitised Creative Sector

On a most simple conceptual level, interprofessional working, including on and in projects are about professional collaboration. Collaborative efforts bring together experts from different domains, firms and professional bodies/communities to initially frame, and then set about solving a specific problem, and to provide a strategic advantage over single discipline or single firm offerings. Professional collaborations, including in-projects, often start by involving entities that possess different expertise and skill sets. In sum, we collaborate to frame (i.e. ask the appropriate question) and tackle problems which are deemed too large or complex for a single individual, team or firm, and to utilise multiple expertise. The increasing breath, depth and complexity of the creative sector projects now usually requires interprofessional collaborations, with a wide range of complementary skills.

Various definitions of skill abound and yet the term remains stubbornly slippery both in practice and policy domains[9]. We have reinterpreted and recontextualised the concept of 'skill webs' (Ashton et al. 2009, 2010) first introduced in exploring the strategies of multinational/transnational corporations (MNC/TNCs), within their knowledge and skill sourcing activities. We have re-applied the concept in the context of small firms, particularly digitised creative sector (such as in NTBFs) which at times, tend to mimic some of MNC/TNCs' innovative practices around 'bridging, linking and bonding', in order to survive and prosper. Small digitised technology firms learn to innovate by connecting and weaving their skill webs, via bridging, linking and bonding (BLB)[10] activities. Additionally, skill webs as a concept is useful in highlighting an analytical and empirical tension on the concept of learning in distributed and project-based activities the firm.

In our re-definition, we have relocated the concept of 'skill webs', at a micro and meso level of firm's operation. Similar to the original usage, we define and employ the concept of 'skill webs' as a mean to enable the researchers *"to focus on the ways in which companies chose to generate and use skills and knowledge they require"* (Ashton et al. 2009, p. 329). Whilst Ashton and colleagues deployed the concept at a macro level of 'skills arbitrage' processes, we have refined and re-appropriated the concept to in-project resourcing, in smaller firms.

In our empirical observations, we have also used the notion of learning episodes, as a primary unit of analysis within our model, outlined later: they are here defined as *"an occasion in which a (project) team learned something significant that advanced the project"* in line with previous studies (Sole and Edmondson 2002, p. S20). Within the episodes, our attention was directed at identifying circumstances when, where and how an interprofessional project team reaches a 'break-through' and/or a 'cul-de-sac', falling within the spheres of explorative or exploitative learning spheres.

Exploitation refers to the firm's refinement and development of existing knowledge with predictable outcomes, whereas exploration refers to the pursuit of new knowledge with uncertain outcomes (1991). We further noted that the nature of interprofessional learning is in the form of generative interactions between individual and collective inquiries (Elkjaer 2004).

As well as 'collaboration' activities, previously mentioned, interprofessional interactions and transactions also include 'coordination and control'. Within our model, we define coordination and control, in line with the literature, broadly as management of processes to enable effective work as well as *managing dependencies between activities.*

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[9] In exploring the 'skill' in the 'skill webs', we remain conscious of its personal and collective dimensions, with productive, expandable and social (PES) features (Green 2011, p. 5, 21, 22; for a fuller argument on the changing dynamics of skill at work see Green 2013).

[10] For details and theoretical underpinnings of interprofessional BLB activities, and expansive and contractive features of skill webs, refer to Alyani (2016a, b).

It may be useful to clarify our use of two further terms before outlining the details of the case vignette, and follow-up commentary. These are 'interprofessional' and 'professional judgement'. In line with previous studies, interprofessional (not hyphenated here) in our work,

> refers to the way in which people from different occupational specialisms come together to work on common projects and, in the process, learn how to make the implications of their insights and judgements explicit to other members of the team of people they are working with. (Guile 2012a, p. 80)

Defining the terms for professional judgment (and later, interprofessional judgement) may require a bit more time, space and patience. As there is a dearth of studies on interprofessional judgement generally and within the evolving digitised creative sector, we have had to turn selectively to features of two recent studies (Foss and Klein 2012; Ranzilla et al. 2013) in an effort to shed light on the processes at play in the development of the capability for professional judgement in practice, and subsequently, potentially draw comparable insights for our circumstances.

The choice of the two studies above is not random: not only both studies are relatively recent, but they are also complementary. The first is broadly a theoretical study with multi-layered issues of entrepreneuriality in its core and the second, is a practice-based synopsis and recommendation, with its sight set firmly on operationalisation of capability for judgement.

Foss and Kleins' recent work has advanced an interesting way to explore entrepreneurship activities, building on the underlying theoretical work of Frank H. Knight who emphasised the development of judgement as a core component of entrepreneurship. Their conceptualisation links entrepreneurship with the resource-based theories of the firm and views entrepreneurship as a particular type of action, particularly, the entrepreneurial exercise of judgement regarding the utilisation and use of resources, under conditions of uncertainty. They thus view judgement[11] as:

> (…) residual, controlling decision-making about resources deployed to achieve some objectives; it is manifest in the actions of individual entrepreneurs; and it cannot be bought and sold on the market, such that its exercise requires the entrepreneur to own and control a firm. (Foss and Klein 2012, p. 78)

As a contrast to the first study's in-depth theoretical positioning and integration, the second study that we draw on is essentially a synthesis of recent practice and theory, organised and advocated by KPMG auditing and consulting firm (produced together with Brigham Young University faculty), specifically on formation of professional judgement (Ranzilla et al. 2013). Whilst the study is pitched as a practice-based modular compendium for trainees and practitioners, it covers a number of interesting features, especially on operationalisation of professional judgment. Their definition of professional judgement, grounded in their sector, is:

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[11] It is interesting to note that in some entrepreneurial activities, professionals may have to exercise 'meta-judgement', which could be described *as "judgment about other people's judgment"* (Foss and Klein 2012, p. 216).

> The process of reaching a decision or drawing a conclusion where there are a number of possible alternative solutions. (…) (and which) occurs in a setting of uncertainty and risk. (and is) typically exercised in three broad areas: – Evaluation of evidence … – Estimating probabilities … – Deciding between options ... (Ranzilla et al. 2013, p. 2)

With those terms covered, we now turn to our case vignette in brief.

2.3   A Case Vignette and a Conceptual Model

As described earlier, our geographical focus remains on the context of Tehran, Jeddah (and Khobar), and Abu Dhabi and Dubai. We have chosen here however to draw mainly on primarily data, in the form of firm-based organisational ethnography, in a highly abridged version of a previous work (Alyani 2016b), set between Tehran and London. Whilst there are, and will clearly be contextual differences, we propose that our model will have enough conceptual insight to apply, with some minor adjustments as necessary, to other locations too.

The case vignette follows a firm, re-labelled here as *AlphaCo*, which was formed as a private small firm within the digitised creative sector in London and Tehran in 2002. Our qualitative longitudinal research design involved five waves (one pilot and four actual) of data collection, covering a period of 10 years between 2004 and 2013, broadly in line with a 'panel design', where as far as possible the same people are contacted, observed and/or contacted and interacted with more than once, with the orientation and focal thematic questions mirroring previous research. As an exploratory study, within the Tehran based firm's context, the account attempts to capture a connected slices of time and place, via the filter of the firm's activity on technical projects. The organisational ethnographic immersion periods, at the firm and/or attached to related project meetings were:

- Four weeks (December 2003–January 2004) in firm in Tehran (acting as a pilot stage);
- Two weeks (June 2007) in firm in Tehran;
- One week (June 2008) in firm in Tehran;
- Various days accumulating to two weeks (between July and September 2009) in Tehran and one week in accumulated days, between June and September 2010, as case follow-up in London, as well as continued ad-hoc virtual contacts and project-issues' tracing and tracking in Summer and Autumn 2011, accumulating to one week.
- Various days accumulating to two weeks (between May and September 2013) in final project (*break-throughs* and *cul-de-sacs*) follow-ups, validation meetings and attendance at *Iran Telecom Fair 2013* (*the 14th International Exhibition of Telecommunications, Information Technology and Networking* held in late September 2013 at Tehran's Permanent International Exhibition Centre, in north Tehran) with the firm.

The empirical elements, derived from the five waves, investigated sharing of problem-reframing/-setting and problem-solving project and interprofessional judgement on the issues that emerge out of daily business challenges in projects, which is both of a technical (software) and a commercial (business model and service design) nature. Despite the potential attrition rate, the study longitudinal design strengthens the shortcomings of a single case study and is of particular value when time-critical processes such as learning are observed.

As a small entrepreneurial firm, AlphaCo started out with a few co-founders with technical (software, science and engineering) and business acumens and it initially engaged in testing the market with a range of software services based on the outsourcing model. Examining the market and the rapid changing patterns of mobile handsets, AlphaCo set out to develop a stable platform for business solutions, offered to both the public and private sector primarily in Tehran.

Technically, drawing on the partner in London and *imitating to innovate*, it opted for initially building applications and solutions on a tested 'common denominator' of short messaging service (SMS)[12] as an embedded, and till then largely redundant feature (due to lack of popular use and small subscriber numbers mainly interested in core service of voice communication), within the Iranian national Global System for Mobile Communications (GSM) network. It has subsequently moved to cover both SMS and iPhone and Android commercial apps.

Initial software development and testing using Java Platform, Micro Edition (Java ME), previously known as Java 2 Platform, Micro Edition (J2ME), as a Java platform designed for embedded systems (e.g. for mobile devices) were undertaken under local and later distributed scrum[13]. As the mobile telecom market grew in size, the SMS VAS segment grow with it. The full force of mobility, as a 'service design' revolution, whilst delayed for about a decade compared to Western Europe and Far East, had at last arrived in Tehran, and with it Iran. With the development of technological tools, digitised creative sector firms such as AlphaCo, and a number of University-Industry based research labs, started to engage in pioneering new service

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[12] SMS is generally accepted to have started in the UK in December 1992: available on digital GSM networks allowing text messages of up to 160 characters to be sent and received via the network operator's message centre to customer's mobile phone, or from the Internet, using a so-called 'SMS Gateway' websites. If the phone is powered off or out of range, messages are stored in the network and are delivered at the next opportunity. The main attraction in Europe has been to send a short message to someone without calling them and low costs. Public and private/corporate SMS services include news, information and transaction, and leisure. It is the introduction and expansion of private and corporate services in Iran (information exchange and transaction) which is the subject of the empirical study, as reported previously (Alyani and Shirzad 2011).

[13] Scrum methodology refers to an agile and lean-inspired software development model based on multiple small teams working in an intensive and interdependent manner. The term is named for the scrum (or scrummage) formation in rugby, which is used to restart the game after an event that causes play to stop, such as an infringement. Scrum employs real-time decision-making processes based on actual events and information. This requires well-trained and specialised teams capable of self-management, communication and decision-making.

creation in practice, exploring service design and innovation, in Tehran. It should be noted that the study was conducted during a time of unprecedented growth both in the usage of mobile phones and expansion of associated services in Iran (spanning 2004-2013), when and where the mobile penetration rates went from near nothing to over well 115 % and it far exceeds the internet usage and many subscribers started to explore and use their mobile phones as personal and often primary communication device.

With that description covered, we have chosen to outline just one on-going project here, evolving over a number of years, as a vignette. It falls within the mobile banking application and solutions, later rolled out for a number of large Iranian banks. In 2004-2005, it was clear that a move towards 'internet banking' in Iran would be slow. Mobile banking (m-banking) as a source of multiple 'service channel' concept and tool was thus introduced and promoted by AlphaCo, while exploring innovative service design. Initially built around SMS, and where needed secure and encrypted SMS were utilised, to allow customers to check accounts and transfer, and later pay via SMS into specified accounts – e.g. utilities bills. The solution did not, and still does not require the use of 3G or 3.5G facilities of online banking via smart phones connected to the internet, although now it is offered via 3.5G services too. The firm and developers draw on their project partners in London, in 'farming' the problem and then ways to re-think/re-frame the solution. This was partly undertaken by exploring service design using mobile phones, as well as by exploiting the use of SMS interfaces in Farsi (Persian) to make the content more user-friendly for all, and cryptography for mobile communications – encrypted SMS – and ultimately "*bringing everything to the lowest common denominator*" so that any customer with almost any "*relatively new mobile phone models*" (as in 2006-2007) and subscription contracts can still use the higher most level of the service.

The service developers faced major issues in creating 'generative metaphors' in problem-setting, to make the banking staff, of either a technical (i.e. Financial Technology – *fintech*[14]), audit or marketing/branding background to 're-contextualise' the issues. A break-through was an initial inquiry leading to an agreement to allow a prototyping phase, overseen by a single bank's Information and Communication Technologies (ICT) departments, to go ahead. Once the prototyping was a success (cutting customer queuing time from an average of 15 min, to conducting most transfers in two to four min), it was quickly taken up as a serious and viable service-channel option. The application was modified over a number of years and has rolled out with many Iranian national and private banks, a number of which are still using an evolved version of the solution.

Essentially, the Tehran and London based team members, as well as the different professionals within the teams, had to find ways to mutually understand and grasp the potential and limitations of service design, given the local conditions. As it was summarised by a team member *"Our learning here is all about 'beta': learning and innovation are coupled and yet learning comes first"*.

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[14] For a brief recent review of the field and uses of fintech see The Economist 2015a, b.

We next turn to our attention to outline our analytical model. Condensing the large project teams activities data by data compression methods, a number of trends became apparent. At the heart of the activities, we noted a range of processes which we labelled as DEAL, as an acronym that stands for the cycle of Design, Execute, Adjust and Learn. Within the DEAL model, various activities were enhanced via formal and informal knowledge brokering and knowledge sourcing, via, in and between projects and firms. A sample series of questions, relating to each problem or inquiry, which are tackled at the different stages include:

- *D*esign: What is desirable and viable, and how feasible is it?
- *E*xecute: What are the processes involved, and how are they to be undertaken for a smooth (and lean) execution? What is the expected outcome and impact of the processes/artefacts?
- *A*djust: What worked and what did not, and why? (such as in prototypes)
- *L*earn: What is or remains to be the core problem and cause? How can we frame and reframe to improve continuously? What is the processes and technologies range of tolerance (allowance), before failure?

The cycle in the model continues with framing and reframing of the new problem and inquiry, which then leads to a new design imperative, transforming prototype to archetype, till an adequate and functioning solution is formulated. Brokerages and sourcing may occur initially via formal means (e.g. contractual domains) but are mainly conducted informally, developing a diverse project skill webs, with trust gradually gained in time, by

- Visits to technology fairs and workshops, nationally and internationally;
- Exposure to global/glocal professionals or Research & Development (R&D) networks; and
- Participation in online developers' space on specific technical problems.

The figure below attempts to schematically outline the above description, expanded further below.

As previously outlined, and now outlined in the model, exploitation refers to the refinement and development of existing knowledge with predictable outcomes, whereas exploration refers to the pursuit of new knowledge with uncertain outcomes (March 1991). Additionally, the nature of in-project interprofessional learning is in the form of generative interactions between individual and collective inquiries, whilst engaged on performative learning (i.e. learning that directly derives out of performance), in order to innovate. These are placed on the horizontal and vertical axis of the model's schematic respectively, as outlined in Fig. 5.1.

In the centre of the Fig. 5.1, drawing on the 'learning episodes', we noted the zone of 'collaboration' and 'coordination and control' activities within project tasks, as articulated and facilitated by interprofessional interactions (and in the technical teams' vocabulary, the reflective phases of the cycles of 'Scrums and Sprints').

Thus in formulating the analytical framework, derived from the data and enhanced by the literature, we attempted to ground our observations and theorisation. As no single strand of literature provided the necessary theory, we brought
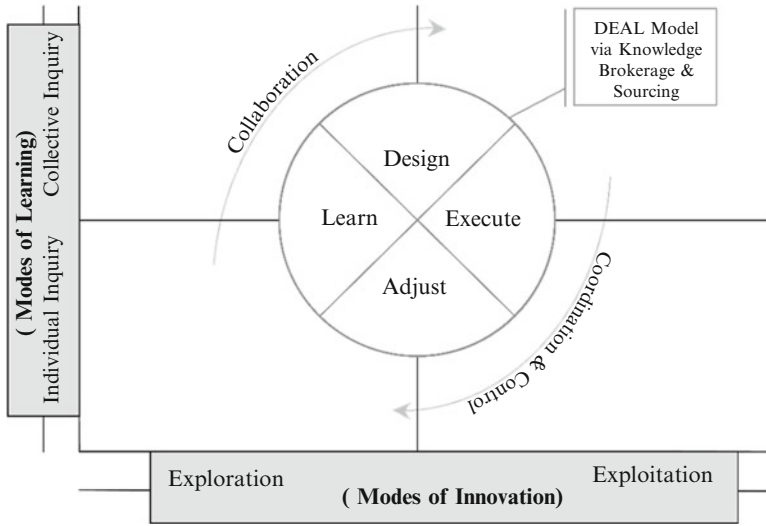
Fig. 5.1 DEAL analytical model: Learning and innovation processes in digitised creative sector projects (Source: author's own compilation based on Alyani (2016a))

together arguments of several theories and soon traced patterns of cyclical exploitation and exploration, within inquiry-based activities.

The potential output of this work and our model can be summarised in two strands: at a micro level (strand 1), we focus on the strategies that enable the firms to discover, develop and commercialise their digitised technologies (as in the case of the vignette, in the form of telecom VAS software and services). In particular, we have come to consider the importance of the development of interprofessional learning and particularly, interprofessional judgement, in pursuit of innovation, as an important area for attention and further investigation. The goal is to better understand how entrepreneurial digitised creative sector firms, establish and utilise brokerage and intermediation, to build an interdisciplinary, and thus interprofessional capability so as to be more successful at innovation, and pursue the successful commercialisation of their new services and products, and along this journey, further upskill and develop their human talent, as a core asset.

In addition, the introduction of the DEAL (design, execute, adjust, learn) model was a way to identify and unpack non-linear processes, which in situ, draw on interprofessional learning and judgement. This is diagrammatically sketched, in a simplified format, in the below figure (Fig. 5.2).

Whilst all the stages of the DEAL processes draws on skill web, the 'prototypes to archetypes' transition phases as outlined above, benefit particularly from the interprofessional judgement and related exchanges. These findings can thus be offered as practical insights at a micro and meso level, to other firms via a potential sectoral 'platform' policy.
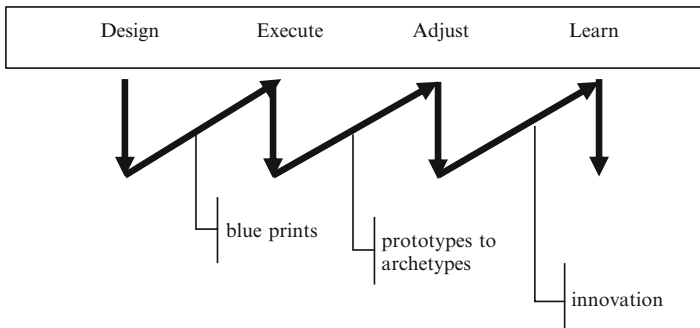
Fig. 5.2 DEAL processes and project stage outcomes (Source: author's own compilation based on Alyani (2016a))

There are also possibly important and interwoven educational implications embedded within the above. Whether in Tehran or elsewhere in the vast higher and technical education system of Iran (and to a fair extend, equally applicable to regional neighbours, such as UAE and KSA's system), there is no longer a shortage on the supply side. A significantly large number of teaching and research universities and training and vocational institutions now operate within the country and the region, with different levels of specialisation and at different stages of quality enhancement. However, a significant challenge for all of them is to enhance their 'university-industry' efforts and relationship, within and between the specialised sectors, and industry and ultimately graduates' job-market. This is so that their curriculum content and pedagogy can be kept relevant and up-to-date. This is no small undertaking in a region that has seen near exponential growth in its higher education in the last two decades.

Whilst similar to 'entrepreneurship', and 'innovation' (as separate undergraduate or graduate school courses and topics), interprofessional learning and judgement cannot be taught, a capability development framework could be facilitated by the way the courses are structured. Insights from our study (and a small but growing literature) are issues that universities, educational institutions and policy-analysts ought to be taking into account, if they are going to sustainably support the need for new forms and models of learning, closer to the practice-based requirements of the workplaces within the specialised and fledgling, yet growing, sectors. Whilst there is an increasing level of policy hype on the emergence of the *Creative Economy* within the region, there also needs to be grassroots and incremental reforms on the practice side.

Equally, the insights from the study's tools and methodology, refined as necessary, could assist in the universities and related institutions knowledge transfer and consultancy activities, to assist in initially unpacking the shortcomings and then upskilling their own staff and their target audiences' LLL efforts. This inquiry-based mode of engagement, based partly on the needs of practice, could potentially further enhance the knowledge transfer in other settings and sectors, so as to support genuine LLL mechanisms, beyond a 'check-list' or a fad. The study's insights on skill

webs processes for example, support knowledge-transfer in different sectors and settings, so this work has a more general argument which is about the necessary 'architecture' of LLL in professional settings, particularly through university programmes as a resource to pass-on to others entering into, or operating within practice-based settings.

Coming out of the above primary focus at a micro level of the firm (strand 1), our forthcoming work, at a meso (sectoral and regional) level (strand 2), plans to explore issues around entrepreneuriality and innovation capability development for new sectors, in aid of sustainable 'decent' job creation, and related meso level policy and practice interventions.

Drawing from policy studies and economic geography in this strand, we have narrowed our remit in the case vignette to the city of Tehran, although will in near future draw on one or two other regional cities to extend the empirical work (with Abu Dhabi or Dubai, UAE and Jeddah or Khobar, Saudi Arabia, as lead candidate sites). This could be timely for two reasons: firstly, if SMEs enterprises are to develop and play a more important role in the industrial policy and (as part and parcel of value-chains of) foreign direct investment (FDI) policies, the way they enhance their learning and innovation capabilities must be better comprehended. Secondly, this meso level engagement may then provide another avenue to consider the sustainability of the region's current 'start-up spring', on both the north and south side of the Gulf.

3   Concluding Remarks: Digitised Creative Sector Upskilling in Pursuit of Global Interconnections for Quality and Specificity

The nascent digitised creative sector in the Gulf, with its growing interconnections globally, both in terms of policy and practice, is increasingly capturing the attention of the policy makers as a viable vista for new sectors, and with it, potentially new and sustainable private-sector employment creation. Our study has explored this (with longitudinal empirics, at a micro and meso level) and reiterates the importance of practical means to better link academic and TVET programmes and workplace learning, with the practical and evolving needs of the firm.

The current regional efforts, in the form of strategic plans on a policy level, and practical brokerage on a practice-at-firm and -sector level, are welcome moves. Sectoral interconnections, globally and locally, and within the sector, in pursuit of quality and specificity, need to be carefully thought-through with potential unintended consequences identified and addressed, so as to be *implementable* with an enhanced engagement and coordination between key stakeholders (i.e. firms in the private and public sector; education and training providers; and government and other oversight/advisory agencies). Policy design therefore is much more than policy

borrowing, and in practice, policy amnesia should not be allowed to disable and disband policy memory, so as to build on unique national and city contexts.

Our exploration on the formation and cultivation of interprofessional judgement, required for innovation, has led us to foreground the role of facilitating brokerage (i.e. BLB) mechanisms. With innovation remaining high on the economic, sectoral and firm-based agenda, workplace learning mechanisms can contribute to the development of workers' essential performative learning and sector knowledge.

Taken together, these factors point to a move away from relying on the credentialist approaches (ironically both dominant in the Gulf region's societal and educational fabrics, and – till recently at least – highly embedded in various international advisory body's solutions), where qualifications are viewed as a proxy for vocational or professional skills, and towards acknowledging the multi-faceted role of social capital in learning by doing[15], and specific to our argument here, nurturing a transition:

> From conceiving learning as consisting of the accumulation of prespecified outcomes to seeing it as the development of judgement. (by undertaking practice-based inquiries, and rehearsing and revising procedures, mid-stream). (Livingstone and Guile 2012, p. 357)

Whilst macro planning and strategy making is an important pre-requisite, it is this gradual firm- and sector-specific capacity building processes[16], at a meso practice and policy level, which will ensure the success of strategies for a fledging sector, with significant regional potential.

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[15] For a recent regional articulation of issues see IMF working paper Cherif and Hasanov (2014, p. 12, 24).

[16] Paraphrasing Napoleon's insight ("amateurs talk strategy; professionals talk logistics") widely cited in military circles, US analysis now frames the issues more in terms of *amateurs talk strategy; professionals talk capacity* (The Economist 2013b, p. S8). Capacity building for sectoral catch-up and in our specific case, capacity building for talent is thus paramount (Bhargava and Kaabi 2014, p. 23). In time, other new policy ideas, grounded in economic geography and industrial development, such as 'Smart Specialisation' (OECD 2013a) may well lead to policy debates and productive forward steps.

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