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Research paper

Emergence of digital services innovation as a path to business transformation: Case of Communication Services Providers in GCC region

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Abstract

Changing business dynamics and pace of digital transformation imperatives are forcing Communication Service Providers (CSPs) with more opportunities as well as threats. Purpose of this research article is to qualitatively explore and recommend a business model canvas perspective for incumbent communication services providers who are aspiring to transform as digital services providers. This study will also focus on how digital services innovations are emerging as a crucial path to business transformation, especially for global CSPs and how regional incumbent CSPs and telecom operators in GCC region are coping with their digital transformation challenges. Due to the contemporary and topical nature, this study is based on literature based exploratory investigation of latest industry reports and academic research with a combination of insights from a wide range of published sources. Telecommunications industry specific reports of international organizations' such as TM Forum and World Economic Forum are duly included for better comprehension and practicality. Comprehending the trends of current digital transformation priorities by global CSPs and consultative recommendations from industry research reports, this study provides a new perspective to understand digital services innovation options for CSPs in business model elements perspective. A comparison of current digital transformation approaches of regional CSPs in the GCC region are provided for better contextualization. As practical implication, inferences made by this study in the form of business model canvas components will help managers and practitioners as an useful tool for further detailed operational planning towards their digitalization goals.

Keywords: *Business Models; Digital Services; Digital transformation; Platforms; Business Ecosystems*

1. Introduction

Digital transformation has become the harbinger of change within many industries by breaking down the traditional silos of business functions. For Communications Services Providers (CSPs) digitalization and move towards an integrated digital ecosystem have become more than vital. However, CSPs have to manage certain key inhibitors of digital transformation which include maintaining legacy Information Technology (IT) systems, compliance pressures from regulatory regimes and changing consumer dynamics, as compared to hyper scale internet companies and other native digital companies such as Amazon, Apple, Google and Microsoft. Nevertheless, these CSPs are aware of the huge opportunities possible by digital services. There are many high demand digital services such as mobile financial services, location-based lifestyle services, mobile ecommerce, on demand retail services, information rich mapping and travel services and these services are heavily dependent on robust connectivity and communication networks which are the main foray of CSPs. These digital services are part of two trillion US dollars industry and can contribute about 15% of total CSP revenues by year 2025. However, to effectively succeed in exploiting the digital services opportunities, CSPs need to redesign their business models and transform their business processes with significant amount resources and innovative partnerships. Clearly digitization and shared value from digital transformation initiatives shall be the key factor for such transformational change.

As per a white paper on Digital Transformation Initiatives for Telecommunications Industry by World Economic Forum [1], a quantum of $2 trillion opportunity is forecast for industry and society by year 2025, with CSPs are moving towards becoming Digital Services Providers (DSPs). Traditional CSPs, who are also referred as telecom operators to focus on creating futuristic communication networks, rich data services and integrated digital services by enabling digital ecosystems and platform business models, as revenue from these digital services will account for more than 25% of total revenues by year 2020. Delighting the digital customer is a challenge and success of the digital business models needs redefinition of customer engagement and personalized customer experience with hyper-personalization as differentiators. Major CSPs are seen following innovative approaches for digital transformation. For instance, SingTel is adapting to acquisition led approach, British Telecom is creating spin-off companies to deliver digital services and Telefónica is partnering with

innovative startups. Purpose of this research article is qualitatively explore these new imperatives of digital services innovation as path to business transformation for CSPs and how regional telecom operators and CSPs in GCC region are coping with similar digital business model challenges.

2. Literature review

With increasing popularity of "anything as a service" economy, service dominant business environment and digital transformation related services can foster new transformational opportunities. These opportunities may be in the form of (i) novel business models with rich financial gains (ii) operational excellence with improved business processes and (iii) enriched customer experience], resulting in greater enterprise value [2,3]. Digital transformation and business model innovations trends in recent times have given rise to many digitalized business models, digital platforms and ecosystems, which are new paradigms that provide new generation digital capabilities and digital services [4]. But these digital ecosystems are widely understood from technical and Information Technology (IT) perspectives more than revenue generating business perspectives [5]. Business ecosystem, by popular definition, is essentially a network of interlinked business entities, vendors, suppliers, distributors and other actors in the value chain of producers and consumers, who will interact with each other in a complementary way within the key components of their business models and value propositions as related to their products or services. Business ecosystems and digital platform business models are thus complementary concepts which will continue to grow with lot of practical value and economic impacts. Platform business models are ideal choice for CSPs as these platforms can technically connected business models with diverse interactions among the suppliers and vendors, consumers across value chain. At a higher level, such platforms can be internal or external [6].

2.1. Trends of digital innovation for Communication Services Providers

In the past ten years, there has been steady rise of business ecosystems and platform business models, which are essentially built over digital capabilities to support different customer segments and portfolio of products and services [7]. 'Digital services' are services obtained and/or arranged through a digital transaction (information, software modules, or consumer goods) over Internet Protocol using shared resources and dynamic interactions of IT systems [5]. In the IBM Global Business Services research report on future strategies of CSPs, it is amply emphasized that CSPs should focus on expanding their digital infrastructure with low cost of ownership and highly agile network capabilities for becoming and effective digital services provider [8]. Moreover, service delivery capabilities of CSPs should be tuned to new digital culture with clear organizational performance metrics for digital priorities [9]. Another comparable research by McKinsey's IT benchmarking study included about 80 global CSPs and articulates five correlated areas of focus for aspiring DSPs. Those five key areas are (i) abilities for robust customer analytics, (ii) digitization of order management, (iii) self-service customer relationship management, (iv) simplified IT-application landscape and (v) automation of IT-infrastructure management [10]. Service providers including CSPs who are leveraging the power of platform business models and digital services have grown dramatically in size and scale over the past decade [11]. Current industry trends also indicate CSPs are opting to strategic partnerships and willing to exploit innovation capabilities of other partners with digital services capabilities. In other words, as discussed in Frost & Sullivan research, key differentiator to become a DSP from CSP will be to identify and align with competent partners who can support and offer value added digital services [12, 13].

By transforming as a fully integrate digital services provider, traditional CSPs can become more efficient with their product offerings and business operations as per IBM research [8,14]. But the question is what are the paths that these CSPs can take towards the digital transformation for becoming CSPs. Though are varying counts of reports, we refer to TM Forum research on CSP business models titled Vision 2020 Future of CSP Business models, which advocate four different paths for telecom companies and CSPs in general [15]. Four different categories of CSPs are based on their levels and abilities of digital enablement and digital efficiency, namely traditional CSPs, digital CSPs, digital ecosystem enabler and integrated DSP. This report also proposes a Digital Maturity Model, in which customer centricity is the key driver for digital transformation with five focus dimensions as: customers, technology, strategy, operations, culture, people & organization. Contemporary service providers can be pure play CSPs under discussion, cloud services providers, internet services providers or other content services providers. Among them, CSPs have the unique ability to provide the fundamental building blocks of access, interconnectivity and applications that are essential for providing digital services. Hence CSPs have better opportunities and incentives to enable new platform business models aided by network transformation, strong collaboration with internet platforms and other vertical industries.

For traditional CSPs, connectivity services have remained largely same in the last decade except the type of traffic they carry and network changes made especially for mobile services. Since the emergence of smart phones, mobile app and social media in the last ten years, CSPs are witnessing sharp decline in their traditional connectivity revenue due to the fact that most voice calls are made through internet and at the same time, over the top (OTT) players taking the major share of data revenue. It is widely reported in many regional telecom markets that smaller CSPs are either merging or bought over by bigger players resulting in market consolidation. Bigger players and multinational telecom companies are becoming more digitalized and attempting to transform their business processes, roles, architectures though about two thirds of such efforts are not successful as per McKinsey research [10].

Digital CSPs are those companies who are actively exploring the possibilities of becoming digital ecosystem and platform enablers, yet providing more value added data services. Many of these digital CSPs have dedicated Digital Business Units (DBUs) to promote additional revenue streams from business customers by providing managed IT services such as managed cloud, manger router and firewall services enabled by cloud technologies, though not all of these efforts have been very successful. Moving ahead in the digital value chain, digital CSPs are trying to compete with hyper scale internet players by becoming digital ecosystem enablers, focusing on digital products, digital services and digital customer experience. Such digital ecosystem models are still emerging, where CSPs are seen as either enablers of infrastructure platform or business platform. Subsequent sections shall discuss more on the imperatives of these digital CSPs and their innovation paths to become DSPs through well planned digital transformation initiatives.

3. Discussions

Digital transformation and business model innovation studies are more closely related and discussed in the recent studies. Digital transformation is almost synonymous with business transformation with the adoption of digital technologies such as advanced mobile services, artificial intelligence, internet of things, big data analytics, social media technologies with a grand shift to service centric context [16]. To understand and map the linkages of digital transformation and innovation, a clear representation of business model components is needed.

Osterwalder's Business Model Canvas (BMC) with it nine integral components are more practitioner friendly for mapping the digital transformation imperatives of digital transformation as compared to some other business model representations such as four box business models [17,18]. From the business model perspective, innovation is essentially a process of novelty to add more value by changing one or few elements of the business model. Transformation on the other hand may be seen as change strategy towards the firms' value creation ability and may involve innovating or changing entire business model elements. This comprehension of business innovation and transformation seems more applicable for explaining the digital transformation and establishment of operational plans for CSPs [19,20].

3.1. Impact on business model components for CSPs

To understand the digital service innovation options and paths towards becoming digital service providers, we chose to explore the current research and industry trends as per BMC elements and related them to the four different stage of CSPs as per TM Forum model.

Value Proposition: Leading global CSPs are attempting to enhance their bouquet of value propositions by delivering services and capabilities beyond network connectivity services. Bundling of services such as high-speed broadband and Pay TV services are seen prevalent in many incumbent operators. It is also observed that CSPs now focus more on existing customers and internal introspection of business operations to provide rich value propositions. To start with high speed connectivity service offerings are enhanced by providing cloud-based services competing with other native cloud and data centre operators. Some digital CSPs in the emerging markets are also exploring IoT based service opportunities. Subsequently, digital CSPs can become digital ecosystem enablers which will move their traditional wholesale and enterprise business to dynamic value chain of network business. By enabling infrastructure platform and/or business platform for partners, digital CSPs can make use of network effects and provide partner ecosystems. Platform business models are popularly known as marketplace models with revenue sharing and settlement capabilities (B2B2X Model). Coming decade will see many such digital CSP driven market place models and platforms with specific focus on other industries.

Customer Relationship Management (CRM): Deepening the customer engagement is seen as a major differentiator among aspiring digital CSPs. Measuring digital customer engagement has been a challenge always with various metrics. Net Promoter Score (NPS) is currently a prominent measure for customer engagement though many other complementary measures are being developed. Leading CSPs who use NPS as a measure of customer engagement are BT, Telstra, Orange, KPN, Vodafone, Swisscom, Etisalat, MTN and many others. Enriching the digital customer experience needs extensive use of digital technologies such as cloud marketing, customer journey mapping, social media-based customer care, personalization through predictive analytics, Artificial Intelligence (AI) powered customer experience tools like chat bots, virtual agents and mobile app centric customer lifecycle management tools. Many CSPs are actively implementing such customer experience enhancement measures mainly in collaboration with other IT system integrators and vendors.

Customer Segments: Profile and customer mix of current traditional CSPs are very different from last decade with dwindling retail customer revenue streams. Business customers contribute about 30-40% revenue for global CSPs, especially for new mobile operators. Many fixed operators provide wholesale bandwidth on demand to other ISPs for better monetization of their network capacities apart from considering bundled Pay TV services as new source of revenue. On the other hand, majority of the new mobile operators concentrate on B2B segments with add on data services, for example financial services (MTN, Safaricom, and Orange) and customer loyalty & rewards exchange portals (Etisalat, Airtel, Vodafone). As a progression to become integrated digital services provider, digital CSPs can play indirect roles in the service value chain by providing a business platform (enabling business like Airbnb or Uber) or technology based infrastructure planform such as API enabled electronic market place (like AWS or Microsoft Azure) to other enterprises who will provide retail services direct to end users. In effect, digital CSPs and digital enablers have to redefine their target customer segments and move towards full digital services capabilities.

Channels: Customer experience management is the key priority for more than two thirds of leading CSPs as confirmed by many industry reports, with many examples of digital experience initiatives that include implementing omnichannel strategies and self-service capabilities through digital portals. Self-care mobile apps and online purchase of service packages are on the rise with reducing number of expensive retail outlets. This means, essentially all CSPs are cutting down on their traditional distribution channels and moving towards digital channels as part of their omni channel strategy.

Key Activities: One of the key deterrents for traditional CSPs in their digital transformation path is the necessity to manage multiple legacy systems to support older price plans and network services, even though majority of their mobile networks are being upgraded to 4G and 5G. Also, proliferating smart phone usage is forcing mobile services operators to establish and maintain mobile apps and apps stores to reduce their operational costs. Similarly, fixed services operators are forced to upgrade to newer Wi-Fi based home services competing with OTT players and other pure-play TV services. Global CSPs with digital ambitions such as Telefonica, Deutche Telekom, Etisalat, Telenor have set up digital business units (DBUs) with varying success. Some of the digital business units of smaller CSPs have been displaying lackluster performance due to gaps in their digital strategy and business goals, over ambitious value propositions, lack of coherent planning, working in silos within their own organizations and due to adhoc partnerships with third parties.

This indicate that traditional CSPs need to revamp their digital strategies to become digital ecosystem enablers and DSPs in true sense. A good choice would be to embrace Anything-as-a-service (XaaS) models such as IaaS, PaaS, SaaS for competing with other pureplay cloud services providers and hyperscale internet providers. Network As a Service (NaaS) is a hybrid mix of PaaS and SaaS models and may include multiple network services such as hosted firewall, bandwidth on demand, virtual networks and content delivery systems. In practice, such NaaS models can be referred as Mobile Virtual Network Operators (MVNO). It may be noted that MVNOs have not been very successful in general in any global market with exceptions from few developed markets Complementing these efforts, digital CSPs can launch innovative public cloud services to augment core business revenue streams

and make use of virtualization to increase their business agility. Integrated DSPs in future will opt for vertical industry collaboration Models, which can be industry verticals (automobile, banking& finance, manufacturing) or application verticals (connected transportation, remote monitoring, payment gateways. Some of the emerging industry verticals are smart city platforms, smart transportation, smart health care, smart energy and smart services for retail distribution and manufacturing. Alternatively, some of the application verticals with appeal to many related industries could be connected vehicles, robotics & artificial intelligence, video surveillance remote monitoring & management.

Key resources: Though networks are being upgraded and traditional CSPs are becoming more digital, mobile network operators should still have resources to maintain older systems such as 2G networks. New resources are to be inducted to exploit robust cloud and virtualization platforms as part of technology transformation and to build digital capabilities such as big data analytics, artificial intelligence, particularly in customer facing systems. For digital CSPs, cloud services are natural route to become digital enablers as they can monetize their core network resources and data centers. Existing and revamped data center capabilities can be extended as cloud services platform, as in the case of British Telecom's BT Cloud. Alternatively, digital CSPs can exercise acquisition strategy or third-party partnerships to build cloud resources required for digital ecosystem. Specific to network infrastructure, rolling out 5G networks and implementation of Mobile Edge Computing (MEC) are seen as great opportunities for digital CSPs to become integrated DSPs. Beyond 2020, digital ecosystems such as IoT platforms, tailored vertical platforms and integrated platforms will bridge the capabilities DSPs and hyperscale internet players.

Key Partners: As evident, CSPs have a distinct advantage of becoming a facilitator for platform business models and digital services with their inherent strength of having network infrastructure. However, they need to extend their digital services capabilities by partnering with other digital services partners and vertically focused solution providers. Digital CSPs around the globe are seen moving towards enabler of platform business models by building strong partner ecosystem and strategic partnerships within the digital value chain. Some of them are building their own cloud based marketplaces while there are others who are exploring acquisition as vertical strategy. It is also widely accepted that CSPs on their own will not be able to provide all digital services catering to all customer segments, and hence value networks with digital services capabilities will play crucial for key partnerships and strategic engagements.

Cost Structure: With declining revenue, cost reduction is prevalent with incumbent CSPs in all non-core activities as well as possible operational costs. Particularly, retail stores and physical touchpoints of telecom operators are being optimized with digital online channels. Digital CSPs aspiring to become digital ecosystem enablers are opting for investing in B2B2x models as platform providers or direct digital service providers. As an example, Twilio is an independent cloud communications platform as a service company and provides communication APIs to leading OTT players and digitals CSPs on OPEX model. Investments are being made in acquisitions on systems and capabilities also such as Orange telecom buying a cybersecurity firm and Telstra buying a video streaming company. Costing and pricing models need to change dynamically and CSPs should invest on systems that can enable them to rely less on legacy monthly usage models and reducing the infrastructure costs by resorting to shared platform models.

Revenue Streams: As obvious, pricing models of existing traditional CSPs are strained continuously and fixed plus usage based monthly revenue models are no longer sustainable. Efforts such as bundling of products and services and cross selling to increase the revenue have not been very effective. As the market is consolidating with mergers, incumbent CSPs are trying hard to compensate loss of SMS and other voice revenue with additional revenue form data and broadband services. For digital CSPs, loss of revenue to OTT players and Appstore from hyperscale internet companies are not matching with their current revenue streams from simple cloud based digital services. Most of the leading digital CSPs are now moving to digital market place models either directly or with partnership with other ecosystem enablers mostly based on revenue sharing arrangements. Technology transformation is still maturing to decide on the possible revenue streams and most digital CSPs are yet to figure out maximizing their value capture possibilities.

Mapping the imperatives of CSPs and their digital transformation options as an overlay of business model components perspective, preceding discussions add credence to the fact that traditional CSPs should decide on their digital transformation choices in line with their strategic objectives instead of emulating the competition and go by the market forces. Many leading CSPs are now digital CSPs with sizeable revenue share from digital services. However, whether to take the path of becoming integrated DSP with direct digital services provisioning approach or to follow the path of the digital ecosystem enabler route need to be contested. To contextualize our discussions and findings, we further explore the industry trends of CSPs in the Gulf region with special reference to incumbent operators from three GCC countries.

4. Comparative review of digital services initiatives by select CSPs in the GCC region

Reports from leading industry research agencies and telecom industry focused reports from TM Forum reveal that CSPs from both western world and emerging economies equally poised to take digital service enabler roles. Some of the Asian and African CSPs are extending their broadband services as digital CSPs to generate additional of revenue of about 15% in the year 201. Some of the examples of digital CSPs making reasonable revenue from add on digital services are China Telecom (Smart Family Services & Internet Finance Services), MTN Nigeria (Cloud & data Centre services), Safaricom (Mpesa Mobile Money services) and NTT Docomo (Smart Life obile VAS). Digital platform enabler models are seen in developed western countries such as Deutche Cloud of Things (IoT Platform), Verizon Connect (Fleet Management Platform), NTT Docomo Landlog Platform (workflow data analytics for construction projects) and Singtel's Amobee Platform (Mobile advertising). Essentially these are examples of digital ecosystems as infrastructure platform models. There are also business platform models, also called as marketplace models, such as SK Telecom's SK Planet which owns and operates 11st.co.kr – an e-Commerce shopping website in South Korea, where online buyers can purchase goods and services from sellers through its online marketplace platform. Similar digital platform models and vertical collaboration models are gaining fast momentum by leading digital CSPs such as Deutsche Telecom, Telefónica' and Orange.

Moving the discussions to Gulf region, as per Digital McKinsey report on Middle East, this region is on the verge of a massive

digital disruption particularly in Gulf Cooperation Council (GCC) countries with massing cross-border digital data flow in the recent years [21]. Among GCC countries particularly, United Arab Emirates, Saudi Arabia, Qatar and Bahrain are leading the digital services race fueled by dramatic rise in smartphone adoption rates, which is more than150% average in all these four countries and strong social media use in GCC region as a whole. Though there are obstacles and challenges, GCC region has ample chance of transforming into a digital hub with digital platforms. Extending the business model perspectives of digital CSPs and DSPs, we compared the current digital service enablement initiatives of select CSPs from GCC region. This is complemented by information gathered from public domains and unstructured interviews with few senior managers working in these organizations, without naming them due to confidentiality reasons. Annual reports of six CSPs in the western market and GCC region were reviewed for their current digital offerings and planned initiatives in three time periods namely 2016-18, 2018-20 and beyond 2020 as reported in their annual reports [22,23,24,25,26,27]. For the purpose of comparison two incumbent operators each from Saudi Arabia (Saudi Telcom Corporation -STC & Mobily), United Arab Emirates (Etisalat & Du Telecom) and Qatar (Ooredoo & Vodafone Qatar) are considered. It is interesting to note that incumbent operators like STC Etisalat, Ooredoo were once monopoly players with state support and now have become active digital CSPs with their digital transformation priorities and digital services enablement compared to the other service providers in their respective countries. All the service providers are providing host of bundled voice and high-speed data services for both retail and enterprise customers and mobile penetration is almost 200% in UAE and Qatar while Saudi Arabia with 150% as of year 2017. Also, all these digital CSPs provide managed IT services such as colocation, managed firewall, managed router and managed security solutions to enterprises.

STC Telecom in Saudi Arabia is forging ahead with host of public cloud services in marketplace model (OpenStack based IaaS, PaaS and SaaS) with self-service portal options in collaboration with many small regional players. This is a good example of infrastructure platform model as digital ecosystem enabler. Some of the niche services covered by STC's digital ecosystem are marketing analytics, location analytics, supply chain services, human resource management, supply chain management and financial services including payment gateway solutions. Mobily, the other digital CSP in Saudi Arabia is a subsidiary of UAE's Etisalat and it is concentrating on payment gateway solutions and connected ATM services for financial sector, connected health, fleet management solutions, "Point of Sale" (POS) solutions and many other white label data services. With IoT services gaining momentum in Saudi Arabia, and integrated M2M control center to provide IoT platform services will be the future focus for both operators as a good example for digital ecosystem enabler.

In UAE, which is ranked among the top smart government initiatives supported by UAE ministries, both the incumbent digital CSPs are providing many bundled enterprise data services and managed IT services. Etisalat Digital is a focused digital business unit to provide digital payments, IoT enablement and big data based business analytics solutions which are mostly customized. Etisalat also has a reward program app, designed as ecommerce marketplace called Smiles Platform for enhancing their own customer engagement with offers from partners. They also have launched a branded mobile service pack called SWYP targeting younger generation with offers and services. Other digital infrastructure platform solutions from Etisalat include digital healthcare (Smart Hospital & Health Information network) solutions, digital education (content platform and packaged learning management solutions). Du Telecom of UAE is more into enabling entertainment and broadcast industry by providing solutions such as Over-The-Top Video Platform, Media Asset Management and Media Fibre Platform. Notably, Du Telcom is the only CSP supporting a MVNO (Virgin Mobile) which is enabled as network as a service model.

In Qatar, the incumbent operator, Ooredoo (formerly Qtel) has stepped up digital CSP initiatives with an array of cloud based managed hosting solutions and IT security solutions. Their customer engagement & rewards program (Nojoom) is also very popular though it is not a marketplace model but rewards and redemption program with host of partnerships. Vodafone Qatar, being part of Vodafone Global, has recently stepped up infrastructure platform solutions such as IoT platform for fleet management, point of sale payment solutions, solutions for healthcare, logistics, security and video surveillance and also smart metering for energy and utilities sector.

In summary, CSPs in GCC region are yet to fully catch up with the digital platform model and integrated DSP opportunities with few exceptions from Saudi Arabia and UAE where the digital services opportunities are gaining fast traction. STC Specialized is a separate unit of STC to provide drone powered solutions and location based solutions catering to different vertical markets. Dubai Smart City partnership by Etisalat is another example of application vertical platform enabler as DSP and there are more such partnerships under development with the expected arrival of Expo 2020, global business event. Du Telecom has also announced a plan for e-SIM based digital infrastructure platform as part of their digital services innovation. Thus, digital CSPs in GCC are in the crossroads of opportunities from digital services and challenges in their journey to become integrated DSPs. These observations are also echoed in a report specific to South Asia, the Middle East, and North Africa (SAMENA) region by A.T. Kearney research, which talks about digital opportunities(digital services) and ICT opportunities (managed IT services). As summarized by this report, dedicated teams and digital business units, partnerships with key digital players to bring digital services to the market(business platforms) and digital services leveraging core telecom network assets(infrastructure platforms) are the key takeaways for traditional CSPs as their digital transformation priorities [28].

5. Findings & practical implications

Given the global market trends and maturing digital services landcape, all traditonal CSPs should clearly set a vision for their digital transoformation journey with complete leadership support and organisatationwide engagement from within their orgnaisation. While the paths to becoming DSP shall be different in strategic perspectives, CSPs must align their opeational priorities in a planned manner for technlogy transformation and business transformations and regional regulatory obligations. We summarize the findings of this study as in Figure 1 portraying different states of CSPs according to the scope and intent of digitalisation as an adaptation from TM Forums model. Options are suggestive with current trends and are not mutually exclusive, yet will depend on the particular market and regional market dynamics. For those CSPs in the red ocean of opportunities with focus on traditional voice and data revenue, cost reduction is seen as most prevalent while many of them have already resorted to service bundling and supporting add on services, especially entertainment content like video and digital TV services. Many new operators, particularly mobile only operators in the emerging markets are in similar state with market consolidation due to mergers and acquisitions by bigger players. Incumbent CSPs with both fixed and mobile operations are providing additional managed digital services utilizing their cloud and data centre resources.

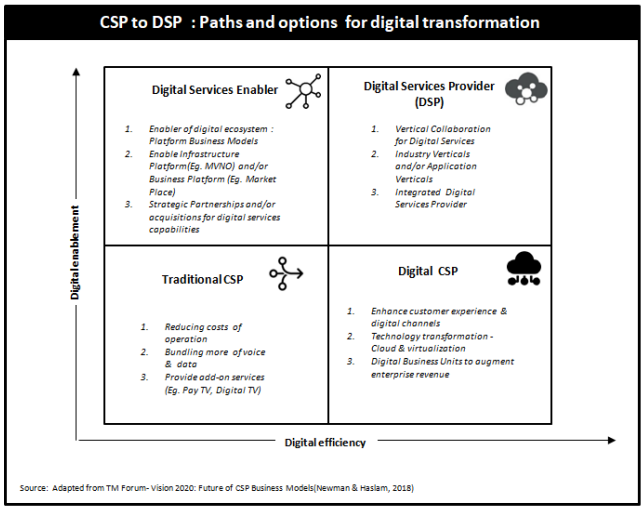

Fig. 1: Options and paths towards becoming integrated digital services provider

These digital CSPs in are reasonably progressing well with their technology transformation as a prelude to become digital ecosystem players. Cloud & virtualization based digital infrastructure are natural choice of these CSPs and the key focus is to generate more revenue through their digital business units and enhancing customer experience through the digital channels.

However, the main opportunities for these digital CSPs are in consolidating their current offerings and become a digital ecosystem enabler and provider of platform business models. Digital ecosystems and digital platform models are high on priorities for these service providers, though there are lot of divided perceptions about the differences and scope of these business choices. Some of the leading operators have created infrastructure platform to enable other operators (E.g. MVNO) and some have resorted to business platforms enabling value networks such as online platforms (Eg. Marketplace). Notwithstanding, compared to other pure play digital services providers such as data centre operators and cloud services providers, CSPs are well placed as enablers of digital platform model, provided they are able to monetize their digital services capabilities through proper strategic partnerships or through acquisition strategy. Coming decade will see emergence of integrated DSPs with vertical collaboration for digital services enabling digital value networks for different industries and application verticals such as IoT ecosystems, Smart Cities, Smart Healthcare, and Smart Manufacturing, Industry 4.0, Smart education and more.

5. Conclusion

Extending the recommendations from recent industry trends, academic literature on digital transformation and secondary case analysis of select regional CSPs, we have provided a new perspective to understand digital services innovation options for CSPs in business model perspective. With special focus on incumbent services providers, we propose an extended business model canvas approach to understand the imperatives and challenges of digital service enablers and DSPs. Also we have compared the current digital services innovation initiatives of select CSPs in the GCC region, especially from Saudi Arabia, Qatar and United Arab Emirates for better contextualization. Considering the newness and emerging trends of this subject matter, this study has utilized limited number of lateral research reports pertaining to digital transformation efforts by global CSPs , which are duly corroborated with recommendations from TM Forums digital service innovation paths for service providers. Due to the theoretical limitations and diversity in industry reports, future studies may include criteria from Digital Maturity Model and the sub-metrics as per TM Forum model for digital service providers for better quantitative substantiation. As practical implication, inferences made by this article as on overlay of business model canvas components shall be helpful for business practitioners and mangers of CSPs for further detailed operational plans towards there digitalization goals.

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