

# *Global Transition to the Subscription Economy: Literature Review on Business Model Changes in the Media Landscape*

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The business models of media corporations and organisations have undergone a pronounced transition that has resulted in significant change in the last decade, shifting from a model based on advertising revenue and printed copy circulation to a subscription-based model. As this article shows, legacy media is currently experimenting with 'various mixes of paywalls.' Among the models that media companies are switching to is the subscription economy model, i.e. the practice of charging audiences for access to online content which, until recently, was unlocked and/or freely available. Incidentally, the collapse of the 'advertiser model,' together with the consequences of the global recession, has brought about significant economic uncertainty for traditional media, pushing it to seek new business strategies for sustainable journalism, while also triggering a reflection on the overall future of media. The aim of this article is to delineate and present the actual changes in the media landscape in relation to subscription economy based on a literature review. Thus, we conducted a systematic literature review including terms as follows: 'subscription economy,' 'digital media,' 'theory of decision' and 'motivation theory,' which yielded 145 results of relevant scientific and research articles published in the last 15 years. The main findings revealed that the media landscape is changing rapidly, in particular in terms of the new digital tools being developed and implemented, and accordingly there is rapid growth in the 'non-conventional' competition to the conventional media, new generations' needs and their behaviour, and the urgent need for various new business models.

*Key Words:* subscription economy, digital media, theory of decision, motivational theory

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## Introduction

The business models of media corporations and organisations have undergone significant change in the last decade – due also to increasing digitalisation, which drives companies to digitalise and consequently internationalise their processes (Ojala, Evers, and Rialp 2018) – shifting from a model based on advertising revenue and printed copy circulation to a subscription-based model.

Subscription economy, which Ritter and Schanz (2019) consider to be a part of the sharing economy (a crucial part of the transition to sustainability), refers mainly to the practice of charging audiences for access to online content, which, until recently, was unlocked/freely available (Kammer et al. 2015), transforming readers into users. This could be connected to the finding of some scholars, specifically Kim, Jeong, and Ghani (2014), who in their work prove to some extent that relevant news is closely related to stock price movements in the market (Besimi et al. 2019), which could be understood as meaning that new-age readers use news to follow the economic information needed for their work.

The collapse of the ‘advertiser model,’ along with the consequences of the global recession, has brought about significant economic uncertainty for traditional media, pushing it to seek out new business strategies for sustainable journalism, while also triggering a reflection on the future of media (Franklin 2014).

Since no business model seems to be able to generate reliable revenue streams for online news services, many publishers turn to the subscription model as a last resort for survival (Chyi 2009). This raises the question posed in Alexander Manu’s *Transforming Organizations for the Subscription Economy: Starting from Scratch* (2017): ‘If you were designing your organization today, how would you design it? In other words, how would you create the future from the ingredients of the present alone?’

Furthermore, there are two modes of thought according to Kahneman (2012): system 1, which is fast, instinctive and emotional, and system 2, which is slower, more deliberate and more logical. Kahneman argues that our decisions, be it everyday decisions or more demanding cognitive processes, such as long-term planning of important home or work strategies, come from the intertwining of these two modes of thought.

According to Thaler (2019), behavioural economics begin with simple observation and continue with data gathering, so in this article, we present an overview of previous research in the field of *subscription econ-*

omy, digital media, theory of decision and motivational theory, in order to illustrate the changes in the media landscape in relation to subscription economy, which is recognised as a fundamental business model for future specialised digital media.

The emerging present is a rapidly changing context for existing organizations, especially in segments of the market where online behavior is replacing physical proximity, and users engage with digital platforms to acquire products and services. These platforms allow users to behave, to leave a mark and to participate in the community of others, which are the values that the people are looking for now (Manu 2017).

This brings us to our main research question, which is as follows: How and what changes have occurred in the media landscape and how have these changes affected business models? The aim of this article is to offer a systematic literature review that will offer answers to the above questions. Additionally, it aims to present the actual changes in the media landscape due to the subscription economy.

### Methodology

For the purpose of this article, we conducted a systematic literature review. In order to find relevant scientific articles, we used the Science Direct database (<https://www.sciencedirect.com>), which widely supports the subject. Using the keyword 'theory of decision' produced 615,194 hits, using the keyword 'digital media' produced 180,290 hits, and using the keyword 'subscription economy' produced 10,151 hits (the searches were conducted between 9 and 24 November 2020). When we entered 'subscription economy' AND 'digital media' AND 'theory of decision' into the search bar, there were 808 results.

In order to solidify the previous research on the subject, we added the keyword 'motivation theory,' resulting in the search term: 'subscription economy' AND 'digital media' AND 'theory of decision' AND 'motivation theory.' This search produced 145 results of relevant scientific and research articles. Our aim was to gain the most up-to-date and relevant insight into the field, which we examined in detail, focusing on the papers whose date of publication did not precede 2004, so those published in the last 15 years. We thus focused on the period between 2004 and the time of our searches (9–24 November 2020).

We present the research in the same order as given in the Science Direct database. We observed that the largest number of publications was found in the *Journal of Cleaner Production* (7) and *Information & Management*

(7), followed by the *International Journal of Research in Marketing* (3), *the Journal of Retailing and Consumer Services* (3), *Futures* (3) and the *International Journal of Research in Marketing* (3), whereas the rest of the journals each feature one article from the selection of our results (see table 1 in the appendix).

### **Results and Discussion**

Subscription economy and subscription services, two elements of the sharing economy which is a crucial part of the transition to sustainability (Ritter and Schanz 2019), are at the heart of some of the key findings of this review of previous research. As noted by Kumar, Lahiri, and Dogan (2019), ‘sharing economy services are mostly adopted by Generation Y, whereas other generations are still in the early phase of adoption,’ so it would make sense to invest in the ‘*relationship* between sharing economy firms (service enablers) and customers.’ Additionally, Liu et al. (2019) argue that ‘entering the third decade of the new millennium,’ the millennial generation, which is ‘in substantive ways unlike all earlier generations,’ is entering its most productive stage of life, so the authors ‘urge researchers to explore the unique characteristics of millennial entrepreneurs, their influence on entrepreneurial motivation, orientation, opportunity discovery and exploitation process and the global ambition of their entrepreneurial ventures.’

Additionally, in our review, we often come upon the concepts of circular economy and digital intermediation – also in relation to branding (Gielens and Steenkamp 2019) – as well as information economy, where personal data is the most valuable asset (Spiekermann and Novotny 2015). According to Rhue and Sundararajan (2014), different digital technologies have varying effects on individual freedom while affecting its diffusion via different political networks, and that the related changes in civil liberties can be affected by both media freedom and internal political institutions. This provides a basis for further exploration of the changes in the media landscape in relation to subscription economy.

While Venkatesh and Chatterjee (2006) argue that online content effectively complements printed content and that the wider the product line, the higher the prices of individual offers, Hong, Nam, and Kim (2018) note that once an online portal becomes a platform for the distribution of news to users, a conflict arises between the portal and newspaper companies regarding the value of the content provided by one and the other.

Furthermore, as Chyi (2009) found in her empirical study on the via-

bility of the subscription model and willingness to pay for online news, since ‘no business models seem to generate reliable revenue streams for online news services, many publishers see the subscription model as a last resort for survival although little evidence suggests users are ready to pay for online news at this moment.’ The author discovered, on the basis of a random-sample telephone survey of 853 Hong Kong residents, that ‘very few users actually responded to paid content and most had no intent to pay in the future.’ Moreover, regression analysis also revealed that age and newspaper use are related to paying intent, while income is not. Chyi (2009) therefore urges publishers to consider the economic implications before adopting the subscription model.

However, let us allow for the possibility that the social mindset, that is, the current mentality and stance of online users will change over the years, driven by the increasing popularisation of digital culture. After all, digital culture empowers people to deliver results faster, whereas companies risk transformation failure by ignoring it (Hemerling et al. 2018). Additionally, according to Lokuge et al. (2019), the emergence and proliferation of digital technologies could increase the innovation potential of most organizations.

As noted by Kammer et al. (2015) in their research article, ‘after more than a decade of giving online news away for free, legacy newspaper organisations in many Western countries have recently begun charging audiences for access to online journalistic content.’ Focusing empirically on the case of Denmark, the article uses one survey ( $n = 1054$ ) and two focus groups to examine the audiences’ attitudes toward paying for online news. The analysis shows that the audiences’ general principles regarding paying for online news have a greater effect on their willingness to pay than the size of the subscription fee. Furthermore, the analysis reveals that younger audiences’ willingness to pay increases if they can combine content from different news providers, thus individualising their news products. According to the researchers, this can have practical implications – either by offering a way forward for economically challenged legacy newspaper organisations, or by compromising the democratic ideals of journalism (Kammer et al. 2015). This has also been observed by Pickard and Williams (2014), who say that paywalls or the subscription model can contribute to a ‘democratic deficit’ by using ‘the ability to pay to gatekeep exclusion from quality news.’

A problem also arises when there is no discernible improvement (‘no added value’) in the quality or uniqueness of the published – and paid for – news stories compared to those that are freely available else-

where online, making the rationale for ‘paying for news’ inexplicable, as noted by Franklin (2014) in ‘The Future of Journalism.’ Franklin (2014) also finds that there is no real agreement within the journalism industry or the academy about the appropriateness of particular alternatives to the advertiser model, as legacy media experiment with various mixes of pay walls (Myllylahti 2013; Pickard and Williams 2014), advertising on mobile devices (Nel and Westlund 2012; Reynolds 2014), selling newspaper apps (Franklin 2014), crowdfunding, crowdsourcing and co-creation (Aitamurto 2013), hyperlocal business models (van Kerkhoven and Bakker 2014), not-for-profit models which secure funding for journalistic projects from international non-governmental organizations (NGOS), private foundations and think-tanks (Requejo-Alemán and Lugo-Ocando 2014), using a mix of public funding, sales and subscription to finance minority language journalism (Zabaleta et al. 2014), efforts to monetise hyperlinks (Doherty 2014) and even the expansive provision of machine- or robot-written news (Clerwall 2014).

However, according to Franklin (2014), Picard (2014) remains optimistic, celebrating the diversity of business models and revenue streams. He concludes (Franklin 2014, 484):

What is clear is that news providers are becoming less dependent on any one form of funding than they have been for about 150 years. Multiple revenue streams from readers and advertisers, from events and e-commerce, from foundations and sponsors, and from related commercial services, such as web hosting and advertising services are all contributing income. It is too early to assess fully the efficacy and sustainability of these sources, but they provide reason to believe that workable new business models are appearing in news provision.

Additionally, Peekhaus and Proferes (2016) find that open-access scholarly publishing has grown steadily in academia in the past few decades as an alternative to traditional, subscription-based journal publishing, whereas Boissy et al. (2012), while examining whether publishing as a ‘big deal’ is dying, found that most participants (of their survey) believe that it is not dead yet, whereas some think it may never die completely.

### **Conclusion**

In our literature review, we focused on conducted research on subscription economy, the theory of decision and digital media. The aim of this paper was to search and present *what research in the field of the subscrip-*

tion economy, digital media, the theory of decision and motivational theory has revealed so far. When conducting further research, however, it might be useful to expand our thinking and relate it to Kuzmanić (2019), who states: ‘The problem of our time in the sense that our current problems and crises are not at all possible to seriously grasp in economic terms, but primarily in the chrematistic categories and the possibilities of that new paradigm of thinking.’

Based on the conducted literature review, we reviewed in more detail 145 papers that focus on the subscription economy and users’ behaviour in terms of digital media. The main findings revealed that the media landscape is changing rapidly, in particular in terms of the new digital tools being developed and implemented, and accordingly there is rapid growth in the ‘non-conventional’ competition to the conventional media, new generations’ needs and their behaviour, and the urgent need for various new business models. In addition, we also learned that search engines, such as Google and Yahoo! Search, are more than just portals and information tools. They are – and probably will be for a while more – the agents of transformation in the changing media landscape, which actually make the business environment more transparent and competitive (Rangaswamy, Giles, and Seres 2009), with blogs also playing a part (Wohlmann 2012).

With all this in mind, as well as the findings of the literature review, including behavioural patterns and new generations, as mentioned by some researchers (Kumar, Lahiri, and Dogan 2019; Liu et al. 2019), even bloggers (Wohlmann 2012), we conclude by quoting the well-influenced thinker and author Rifkin (2007) who once wrote: ‘Science explores, technology executes, man conforms,’ and so the fundamental conclusion of this paper, in which we examined the findings of previous research in the field of the subscription economy, digital media, the theory of decision and the motivational theory, is that the age of media transformation is already well ongoing.

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TABLE 1 Review of Scientific Publications Based on the Keywords 'Subscription Economy' AND 'Digital Media' AND 'Theory of Decision' AND 'Motivation Theory' (2004–2019)

Authors (year)	Indicators/models/subjects
Bischof, Boettger and Rudolph (2020)	Subscriptions, curation, decision-making, risk, interval
Netter, Pedersen and Lüdeke-Freund (2019)	Sharing economy, collaborative consumption, conceptual boundaries business model
Ritter and Schanz (2019)	Business model, sharing economy, business model innovation, value creation
Martinez Dy (2019)	Digital enterprise, entrepreneurship, cyberfeminism, social embeddedness
Rossi et al. (2019)	Indicators, metrics, business model, sustainability, circular economy
Gielens and Steenkamp (2019)	Branding, digital intermediation
Saavedra and González (2015)	Willingness to pay (WTP), newspaper, subscription plans, consumer decision-making
Kumar, Lahir, and Dogan (2019)	Sharing economy, customer development, multigenerational marketing
Perryer et al. (2016)	Pedagogy, motivation, game-based learning, gaming
Ojala, Evers, and Rialp (2018)	Digitalisation, digital platforms, internationalisation, bottlenecks
Lokuge et al. (2019)	IT portfolio management, digital innovation, readiness, case study, survey, CIO
Phang et al. (2019)	Consumer behaviour, China, data analytics, digital economy, e-commerce, emerging markets, empirical research, machine learning
Phillips et al. (2019)	Economic landscape, agricultural systems, digital agriculture, interoperability, data
Goldfarb and Tucker (2019)	Internet marketing, digitalisation, digital economy, online promotion, digital distribution
Chipidza and Leidner (2019)	ICT projects (information and communication technology), literature, development, developing countries
Li et al. (2019)	Virtual acculturation, social media, social contact, social learning
Park and Armstrong (2019)	Consumer motivations, online shopping
Liu et al. (2019)	Millennials, entrepreneur, international entrepreneurship

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TABLE 1 *Continued from the previous page*

Authors (year)	Indicators/models/subjects
Kannan and Hongshuang (2019)	Digital marketing, internet/mobile (users), search engine
Galloway (2017)	Attention, attention span, visual communication, mobile PR
Brown, Woodhouse, and Sioshansi (2019)	Digitalisation, electricity, innovation, disruption, new business strategies
Nakano and Kondo (2018)	Multichannel shopping behaviour, purchase stages, behavioural data
Shukla and Drennan (2018)	Virtual consumption, multiplayer online role-playing games, social network theory, online communities
Spencer, Butalis, and Moital (2012)	Technology adoption, decision-making, leadership
Pick, Sarkar, and Johnson (2015)	Technology utilisation, spatial, socio-economic factors, policy
Tan et al (2018)	Mobile social media advertising, tourism products and services, social media, mobile commerce
Holsapple, Hsiao, and Pakath (2018)	Business social media analytics
DeVoss and Porter (2006)	Ethics, Filesharing, Napster, Plagiarism
Browder, Aldrich, and Bradley (2019)	Innovation, learning, expertise, collaboration, 3D printing, prototype, design
Nishida, Pick, and Sarkar (2014)	Japan, digital divide, ICT, ICT use factors, regression
Calvo-Porrá, Fai?a-Medín, and Nieto-Mengotti (2017)	Digital technologies, satisfaction, engagement, interaction
Aleem, Fai?a-Medín, and Nieto-Mengotti (2016)	Software game, video game, online game, empirical investigation
Rhue and Sundararajan (2014)	Democracy, internet, social media, influence
Laurent et al. (2015)	Centralised model, identity and web 2.0, socio-technical processes, user-centric model
Alderete (2019)	Internet use, internet access, digital divide, ICT, poor populations
Howard et al. (2006)	Automotive e-hubs, barriers, interaction
Bartikowski et al. (2018)	Digital divide, majority and minority consumers, mobile internet, wellbeing
Aguiar and Martens (2016)	Digital music, copyright, downloading, streaming

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TABLE 1 *Continued from the previous page*

Authors (year)	Indicators/models/subjects
Beltagui, Kunz, and Gold (2019)	Additive manufacturing, 3D printing, open source innovation, social sustainability
Salehan, Kim, and Lee (2018)	ICT, national culture, globalisation, technology adoption, technological innovation
Das and Drine (2020)	Catching-up, efficiency, stochastic frontier, human capital
Drachen et al. (2014)	Game analytics, auction house, business intelligence, game economy, player behaviour
Scheaf et al. (2018)	Signals, media coverage, interaction
Bartolini, Santons, and Ulrich (2018)	Property, intellectual property, copyright, trade secret, patents, dispute resolution, data protection
Kabbiri et al. (2018)	Extended technology adoption model, smart phone use
Hong et al. (2018)	Value of online news contents, internet portal, newspaper companies, revenue sharing
Jansen (2020)	Software ecosystem governance, focus area maturity models
Ding (2019)	Appraisal theory, information system continuance models, innovativeness
Hutchins (2016)	Mobile television, mobile media, copyright, football leagues, Australia
Carbonell, Sánchez-Esguevillas, and Carro (2015)	Emerging issues, weak signals
Mäntymäki and Salo (2015)	Virtual worlds, customer value, virtual purchasing, virtual items
Marchand and Hennig-Thurau (2013)	Video games, entertainment industry, digital distribution, social media
MacKay et al. (2018)	Fisheries management, non-compliance, behavioural insights
Alpar, Engler, and Schulz (2015)	Influence processes, reuse, social software
Sim et al. (2014)	Artificial neural networks, multilayer perception, perceived credibility
Ruotsalainen et al. (2017)	Renewable energy, social transformation
Benlian and Hess (2011)	Cloud computing, technology adoption, theory of reasoned action
Von Krogh and Spaeth (2007)	Open source software, interdisciplinary research, innovation

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TABLE 1 *Continued from the previous page*

Authors (year)	Indicators/models/subjects
Mabon (2020)	Climate information services, Japan, risk governance, social dimensions of climate change
Ivaturi and Chua (2019)	Online communities, norms, beliefs
Tyce (2020)	Political settlement, innovation, mobile money, Kenya
Osman et al. (2019)	Analytics, behavioural OR, data envelopment analysis
Panda and Jain (2018)	Personality theory, emotional ill-being, personalities, physical ill-being, India
Hinson (2010)	E-business, value chain, exports, internet, Ghana
Lyons, Hammond, and Mackay (2019)	MaaS, user perspective, travel behaviour, integration
Turner (2012)	Regulation, broadcasting, professional sport
Peekhaus and Proferes (2016)	Faculty experience, Library and Information Studies, open access
Hsiaofen Chen and Fu (2018)	Hedonic value, mobile value, sociability value, willingness-to-pay
Mahmood and Sismeiro (2017)	News, social influence, latent space approach
Bagwell (2007)	Survey, theory, empirical analysis
Konietzny, Caruana, and Cassar (2018)	Online gambling, enjoyment
Lee et al. (2019)	Positive computing, mobile and wearable technologies, IoT
Schröder et al. (2019)	Sustainable production, sustainable consumption, emissions, research
Funk (2017)	Sport, consumer, design, user, experience, technology
Tomiyama et al. (2019)	Product development, design
Li et al. (2016)	Cloud computing, cloud spot pricing
Ferranti et al. (2019)	European Union, Natura 2000, implementation experience
Zhang et al. (2019)	Manufacturing system, mass customisation, personalised customisation, model innovation
Meade and Islam (2015)	Diffusion models, mobile telephony, internet
Guo and Bouwman (2016)	Mobile payment, merchants, adoption, analytical framework

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TABLE 1 *Continued from the previous page*

Authors (year)	Indicators/models/subjects
Mohr (2007)	Motion pictures, marketing, promotion
Zhang and Liang (2012)	Green ICT, innovation system, green innovation, environmental sustainability
Wiener, Hoßbach, and Saunders (2018)	Dual business models, synergies and tensions, business model integration
Shin (2007)	Information policy, telecommunication policy, South Korea
Shin and Jung (2012)	Socio-technical systems theory, South Korea
Grajek and Kretschmer (2009)	Usage intensity, consumer heterogeneity, fixed-mobile substitution
Mesak et al. (2011)	Marketing, advertising, new subscriber services, optimal control theory, service costs
Al-Debei and Al-Lozi (2014)	Value dimensions, value-based approach, Jordan
Abu Bakar and Bidin (2014)	Mobile advertising, marketing, movie advertising
Shin and Kweon (2011)	Broadband ecology, South Korea, socio-technical perspective, structural equation model
Boissy et al. (2012)	Publishing, business, interviews
Binder (2016)	Fisher effect, gold standard, hyperinflation, great depression, debt deflation
Fedorowicz et al. (2014)	Digital government, public safety networks
Suddaby, Viale, and Gendron (2016)	Institutions, organisational fields, social position, social skill
Arena, Azzone, and Mapelli (2018)	Drivers for evolution, energy sector, institutional logics
Belleflamme, Omrani, and Peitz (2015)	Platform markets, network effects, asymmetric information, P2P lending
Wohlmann (2012)	Blogs, entrepreneur of the self, life writing, age awareness
Aczel, Peake, and Hardy (2008)	ICT for development, learning communities, pedagogical issues
Yue Zhang (2016)	Technological transition, 3G mobile networks, China
Rymaszevska, Helo, and Gunasekaran (2017)	IoT, servitization, manufacturing, creation
Currie (2012)	TEMPEST, technology, stakeholders
Keller, Lyoyd, and Bell (2015)	Gender, culture, feminism, productivism, symbolic boundaries

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TABLE 1 *Continued from the previous page*

Authors (year)	Indicators/models/subjects
Ojo, Janowski, and Awotwi (2013)	Mobile services, development, structuration theory, vulnerable groups
Rangaswamy, Giles, and Seres (2009)	Search engines, business impact
Stocker and Whalley (2018)	Internet access, broadband, consumer experience, Ofcom
Gupta, Seetharaman, and Raj (2013)	Cloud computing, Software-as-a-Service, Platform-as-a-Service, SMEs
Harris, Wang, and Wang (2015)	Multimodal transport, ICT, technological trends, cloud computing, Internet of Things
Borés, Saurina, and Torres (2003)	Technological uncertainty, strategy, ICT
Majumdar (2008)	ICT, public policy, US telecommunications industry, wage structure
Liburd (2012)	Tourism research, epistemology, web 2.0, paradigm
Spiekermann and Novotny (2015)	Personal data market, economics of personal information, privacy regulation
Messinger et al. (2009)	Virtual worlds, gaming, avatars
Jang et al. (2015)	Demand response, critical peak pricing, response index, heterogeneity
Tallberg et al. (2007)	Service adoption, regulation, competition
Chik (2011)	Google video search engine, internet intermediaries regulation, safe harbour, fair use
Ooi et al. (2011)	Broadband, Malaysia, adoption, consumer behaviour, structural equation modeling, developing countries
Sandvig (2004)	Innovation, popularisation, internet infrastructure
Otto et al. (2013)	Interoperability service utilities, business model, reference model
Godoe and Hansen (2009)	Innovation regimes, technological regimes, entrepreneurship, communications
Van Gorp, Maitland, and Hanekop (2006)	Internet, technology, firm, market, competition
Aapaoja et al. (2017)	ITS platform, business models, service concepts, e-marketplace
Palvia, Baqir, and Nemati (2018)	Socio-economic development, impacts
Clemons (2009)	Advertising, monetising the internet, online revenue without advertising, social networks

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Authors (year)	Indicators/models/subjects
Baron (2004)	Computers, culture, email address, integrational linguistics technology, writing
Shaffer and Arkes (2009)	Preference reversals, incentives
Kirs and Bagchi (2012)	Trust, ICT related phenomenon
Turner and Shilbury (2005)	Sports, broadcasting, Australia
Wang (2015)	Technology excellence, Service experience, mobile services
Kang and Downing (2015)	wiMAX, 3G, two-sided markets, market entry, indirect network effect
Singh, Payal, and Bharti (2019)	Cyber physical system, cloud computing, Internet of Things (IoT)
Green and Pelozo (2015)	Social responsibility, corporations, recession, advertising
Reed et al. (2012)	Identity, consumer behaviour
Servia-Rodríguez et al. (2014)	Social Web, data mining, tie strength, social spheres
Venkatesh and Chatterjee (2006)	Online content, print, offer
Sorescu et al. (2011)	Retailing, innovations, value creation
Acheson and Maule (2006)	International trade, cultural goods
Yang et al. (2018)	China, health, cities
Zoderer et al. (2016)	Ecosystem service mapping, Ecosystem service potential
Johnson (2005)	Libraries, Iraq, war
Purtova (2009)	Data protection, property in personal data
Brydon and Vining (2006)	Knowledge management, public good
Menell and Scotchmer (2007)	Innovation, patent, copyright, trade secret
Saha (2005)	Pervasive computing
McClellan, Low, and Tan (2004)	ICT, technological issues
Boccaletti et al. (2014)	Networks, processes, dynamics