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INFOPRENEURSHIP AS AN EMPLOYMENT OPTION FOR LIBRARY AND INFORMATION SCIENCE STUDENTS AND GRADUATES IN SOUTH AFRICA

A literature review

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Abstract

Purpose - The review of literature aimed to determine if infopreneurship can employ Library and Information Science graduates in South Africa. The concept of infopreneurship, infopreneurship requisite competencies, areas of infopreneurship, and its challenges are discussed.

Design/methodology/approach - This paper applies a traditional literature review.

Findings - The results of the review of relevant subject literature indicate that infopreneurship, as a feature of the information sector, is practised in South Africa. Furthermore, it has established that infopreneurship is constantly developing, as are the activities infopreneurs can engage in. Notwithstanding its challenges, the findings, particularly those pertaining to the areas of infopreneurship, show that infopreneurship can be an employment option for LIS students in South Africa.

Originality/value – The review has brought together related studies in the domain in Africa and has been updated using the most recent studies, providing new information and knowledge for further practice, research, teaching and learning in the domain.

Keywords: Entrepreneurship, entrepreneur, infopreneurship, infopreneur, Kirzner, Schumpeter, information broker, information consultant

Paper type: Research paper

1. Introduction and background

Ideally, all tertiary education graduates should be able to earn a living with the knowledge they have acquired from Higher Education Institutions (HEIs). At the moment, a South African graduate's main focus is attaining formal employment in either private or public entities (Professional Provident Society May 12, 2016). However, as noted previously, neither of these employment tracks can cope with formal employment demands. Increasingly, graduates who fail to secure formal employment seek alternative employment; basically, any job that enables them to support themselves and their families (Moriri May 18, 2016). Unemployment is one of the main challenges faced by South Africa, and the inability to absorb graduates into the labour force has been noted, among others, by the Organization For Economic Cooperation and Development (OECD) (OECD 2017, 1) (Statistics South Africa (StatsSA) 2020). Oluwajodu et al. (2015, 1) note that unemployment has had a major impact on other aspects of the economy, such as the reduction of economic welfare and the erosion of human capital. To combat this epidemic, vast programmes have been introduced by the government; such as programmes targeting Small, Medium, and Micro Enterprises (SMMEs); Expanded Public Works Program (EPWP); The New Growth Path (NGP); and The South African Decent Work Country Program (SADWCP), among others (South African Government 2017). The Department of Small Businesses believes that entrepreneurship is the key to economic growth (SA News November 11, 2015) and development. Ultimately, failure to recognise or acknowledge infopreneurship as an alternative source of employment would be a considerable oversight. Beside recent studies by Iwurie (2015) and Iwurie and Ocholla (2016) on its limitations, infopreneurship is not given sufficient attention in the country despite its importance as discussed. There seems to be a gap in the knowledge and awareness of the infopreneurship sector in South Africa and its potential for alternative job creation. The main research question in this study is: what is the status of infopreneurship in South Africa? The traditional literature review will focus on the following: unpacking the concept infopreneurship, discussing its areas or types, competencies and challenges

This paper reviewed literature on infopreneurship by using themes such as infopreneurship (conceptual framework), areas of infopreneurship, competencies of infopreneurship, and its challenges. Literature on entrepreneurship, infopreneurship, small, medium and micro-enterprises (SMMEs), information brokerage, and information consultancy was reviewed. Such literature was largely sourced from popular databases such as SCOPUS and LISTA by using infopreneurship and entrepreneurship as main search terms, focusing largely on peer refereed articles published during the last 15 years. Knowledge in the field from previous studies by the authors provided useful information for developing and interpreting the review information. We discuss the themes in the next sections.

2. Infopreneurship: conceptual framework

The term ‘infopreneur’ is relatively new, although related terms such as ‘information consultant’ and ‘information broker’ have been used in the past studies, i.e., Ocholla (1998), Oduwole and Onatola (2008). Essentially, infopreneurship is entrepreneurship, information consultancy and information brokering, and its business is the production, sale and provision of information goods and services for a fee (Amin et al. 2011; Coulson-Thomas 2001; Chandler 2007; Dance 1994; David and Dube 2013; Du Toit 2000; Ivwurie and Ocholla 2016; Kesavan 1998; Lahm and Stowe 2010; Oduwole and Onatola 2008).

Simply put, a consultant is an individual who provides his/her services for a fee (Broughton *et al.* 1991, 4). Information consulting is one area of consulting. An information consultant is an individual with expertise (research expertise, data analysis expertise, information searching and retrieval skills, etc.) and analytical skills to advise clients on finding pragmatic solutions to real-world problems (Oduwole and Onatola 2008, 67-68; Pavisich 1988, 28; Vickers 1992, 260).

An information broker is a middleman who either buys and sells information products, or acts as a mediator between the information user and the information (Oduwole and Onatola 2008, 66; Onaade 2012, 13). An information broker collects information from various sources, rearranges it to suit a client, and then sells it to the client; bridges the gap between what is available and what the end-user wants; performs market research (Broughton et al. 1991, 4; Foss 1998,2-3; Kehoe 1997, 69).

Infopreneurship is not as widely known as entrepreneurship. Kesavan (1998, 2) explains that the word ‘infopreneur’ is a combination of the words ‘information’ and ‘entrepreneur’. Similar to both a broker and a consultant, while acting as an entrepreneur, an infopreneur either creates/produces or trades his/her information products and services (Chandler 2007, 1,51; Oduwole and Onatola 2008, 67); or acquires, develops, markets, and sells the information product or service (Coulson-Thomas 2001, 231; Kesavan 1998, 2). Using Schumpeter’s approach of creative destruction¹, Lahm and Stowe’s infopreneur (2010, 54) integrates old ways of infopreneurship with new ways inspired by technological advances. To Amin *et al.* (2011, 6) an infopreneur creates value by gradually refining data into information and knowledge relevant to the user. According to Ivwurie and Ocholla (2016, 324) only individuals with the requisite skills can practise infopreneurship.

¹Schumpeter’s theory of creative destruction considers an entrepreneur to be someone who creates new industries and thereby precipitates major structural changes in the economy (Casson 2010:7). In contrast to Kirzner’s assumption, Schumpeter’s approach views opportunities as subjective and as created by entrepreneurs (Alvarez 2005, 113).

²The basic concept in Kirzner’s entrepreneurial alertness and discovery approach is alertness (Yu 2001, 48), which is described as an attitude of receptiveness to available (but hitherto overlooked) opportunities that lead to entrepreneurial discoveries (Kirzner 1997, 72).

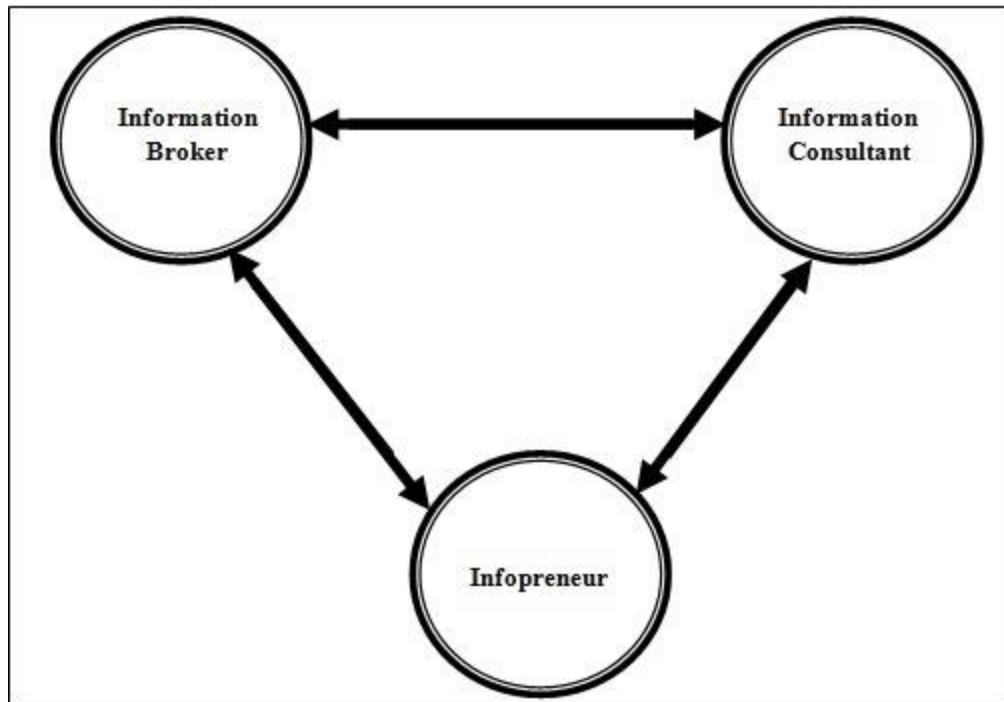


Figure 1: The conceptual framework of infopreneurship

- **Entrepreneurship and SMMEs**

Entrepreneurship, either through the alertness and discovery approach or through the creative destruction approach, is quintessentially all about exploiting potential profit opportunities, and in the process starting an entrepreneurial venture (Kuratko *et al.* 2016, 668). Upon entry into enterprising, the entrepreneur's venture, regardless of how grand the discovered or created opportunity, is either a start-up, a Small, Medium, and Micro Enterprise (SMME), or a nascent business (Department of Trade and Industry (DTI) 2008, 1; McMullan and Kenworthy 2015, 29; Parker 2009, 310).

According to DTI (2008, 2) SMMEs are predominantly carried on in any sector or subsector of the economy. Besides being drivers for sustainable economic development (Musara and Olawale 2012, 31), SMME entrepreneurs enable people to find prosperity (Kuratko *et al.* 2016, 19). According to the Small Enterprise Development Agency (SEDA) (2016, 5), SMMEs can either be formal or informal enterprises. Informal sector enterprises are not registered, recognised or protected under the legal and regulatory framework, while formal sector enterprises are registered, recognised and protected under the legal and regulatory frameworks (DTI 2008, 8; International Labour Office (ILO) 2002, 3).

In short, the underlying factors establishing the conceptual framework for infopreneurship include the fact that both formal and informal enterprises lack a generally acceptable definition (Alvarez 2005, 1; Fisher and Kunaratnam 2007, 13); that both entrepreneurs and infopreneurs are either innovative, creative, disequilibrative and extraordinary, or the opposite; that is, imitative, alert, equilibrative and ordinary (Amin *et al.* 2011, 9; Yu 2001, 49); both are profit-driven (Ivwurie and Ocholla 2016, 324; Kuratko *et al.* 2016, 668); both start-off as SMMEs (Ivwurie and Ocholla 2016, 330; Parker 2009, 310); and their ventures can either be formal or informal (DTI 2008, 1-2; SEDA 2016, 17); lastly, both are interdisciplinary

(Ivwurie and Ocholla 2016, 340; Kuratko et al. 2016, 15). Below is a graphical representation of this relationship.

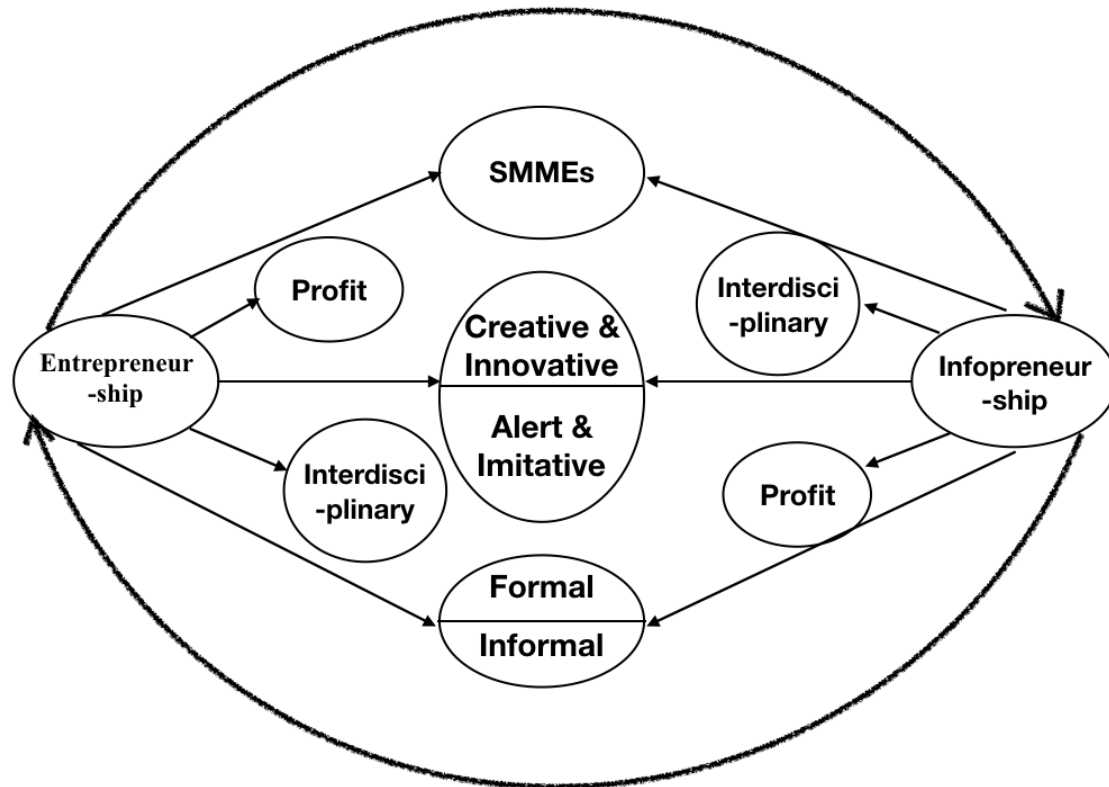


Figure 2: *Entrepreneurship and infopreneurship*

3. Areas of infopreneurship

A new era filled with opportunities for infopreneurs has been ushered in by the transition of information from being just part of the human heritage to being a commodity: the speed of innovation of the ICT sector and information users' willingness to pay for information products and services (Amin et al. 2011, 9; Brindley as quoted in Garnsworthy 2009, 2; Ocholla 1999, 107; Pavisich 1988, 9). The opportunities the authors refer to are known as areas of infopreneurship. According to Ocholla (1999, 107), infopreneurship areas refer to projects and activities carried out by an infopreneur.

There are still new and under-explored infopreneur markets within the public and the private sectors (Ocholla 1999, 109). Noting the benefits of technology and expounding on Ocholla's argument, Oduwale and Onatola (2008, 63) believe that new areas of infopreneurship are created each time ICT evolves. Thus, technology makes infopreneurship possible (Buda *et al.* 2011, 33). Hence, Amin *et al.* (2011, 14) believe that new and more sophisticated infopreneurship areas will continue to be unearthed. Concurring, Boadi (2006, 74) asserts that for inventive infopreneurs, income-generating activities might be limitless. Consequently, Ivwurie and Ocholla (2016, 333) observe a large variety of alternative options for infopreneurship.

According to the degree programmes, a study by David and Dube (2013) categorised infopreneurship. Ivwurie and Ocholla later adopted these categories (Ivwurie and Ocholla 2016), with minor modifications. According to David and Dube (2013, 266-267), the categories of infopreneurship are: Records and Archives Management; Library and Information Science; Journalism and Media Studies; and Publishing

studies. In his research, Ivwurie (2015, 33-34) adds Information and Communication Technologies and Computer Science, which consequently overlap in David and Dube's classification. To this end, the review has seen it fit to merge the two; hence, we have Information Communication Technologies-Computer Science. Table 1 provides the areas of infopreneurship.

Table 1: Areas of Infopreneurship

Records and Archive Management (RAM)	Journalism and Media Studies (JMS)
<ul style="list-style-type: none"> • Setting of records centres • Records management services • Collection management services • Documentation • Database design and management system • Data services involving data analysis • Designing and developing data capturing software • Records classification and indexing • Registry systems analysis and design • Records surveying • Records appraisal • Automation of records management systems; 	<ul style="list-style-type: none"> • Television and radio broadcasting • Online advertising • YouTube vlogging • Blogging • General advertising • Satellite connection installation • Online news • Online business • Desktop and electronic publishing • Video editing • Photo booth rental services • Event photographer and videographer • Photo-shoot and Photoshop studio
Library and Information Science (LIS)	
<ul style="list-style-type: none"> • Library automation business • Designing of library buildings • Indexing and abstracting • Organising and setting up of library • Knowledge and Information Consultancy service • Maintenance of services offered through consultancy services • Referral services • Project writing • Preparing business plans • Business registration • Research and pooling of information for clients • Novel, short story, and poetry writing • Workbooks • Information provider's skill development programs 	<ul style="list-style-type: none"> • Compilation of bibliographic lists • Cataloguing • Development of specialised libraries from scratch • Helping libraries write proposals. • Organising seminars, workshops and conferences and preparation of proceedings • Organising files and planning of paper flow • Online and offline searching and retrieval of information • Substitution for librarians who are away on leave, etc. • Performance of chores (moving, barcoding, shelf reading) • Lending library • Reading room • Career counsellor
Information and Communications Technologies-Computer Science (ICTs-CS)	
<ul style="list-style-type: none"> • Cyber café • Web site creation • Troubleshooting and PC repairs 	<ul style="list-style-type: none"> • Forensic investigation services, • Design and implementation of customised information systems

<ul style="list-style-type: none"> • Software and hardware installation • Security devices installation • Designing local area networks (LAN) • CCTV installation/maintenance • Tracking device • Software designing • Software creation and development; • Networking 	<ul style="list-style-type: none"> • System programming • Conversion of manual file into M/E-files • Global system for mobile communication (GSM) connectivity • Airtime business • Phone call centres • Phone repairs • Network maintenance • Fax messages • Internet service provider • Database design and management system • Computer and ICT skills training centre
Publishing Studies (PS)	
<ul style="list-style-type: none"> • Newsagent • Books publishing • Editing and proofreading • Magazine report • Development of professional journals • Bookshop, book trade and book drive • Compilation of directories • Translation services • Information repackaging • Document delivery services • Document vocabularies • Newspaper clipping services. • Periodical subscription agency • Iconographers • Property networking and multi-listing • Portfolio management • Book and print media selling and marketing • Audio and video products 	<ul style="list-style-type: none"> • Stationery shop • Photocopying, printing, scanning, lamination, binding workshop • Reprography services • Online bookstore • Digital book/periodical publishing or e-publishing • Subscription agency of electronic books/journals • Publishing projects consultancy • Graphic designing services • Educational publishing • Authorship • Publishing liaison • Freelance editor • Content cover designer and Illustrator • Evaluator • Tips booklets • Online/offline subscription newsletters • Electronic books • Pricing strategies • e.Commerce (selling products on eBay, Amazon, Gumtree, OLX) • Advertising services

(Batthini 2014, n.p; Chandler 2007, 83,87-98; David and Dube 2013, 267-268; Elisha 2009, 30; Iwurie and Ocholla 2016, 334-336; Ocholla 1998, 91-92; Ocholla 1999, 107)

Amin *et al.* (2011, 15-16) present their areas of infopreneurship in the form of five (5) models:

- **Aggregator:** an infopreneur that systematically offers a storage platform to store or share private or public information over the Internet. YouTube, Facebook and Flickr are examples of this type of web flow aggregation. The revenue model for an aggregator infopreneur is based on online advertisements.
- **Organiser:** An organiser offers a platform to organise public information on the Web from diverse sources, such as customers, publishers or other web sources, and everyone owns the knowledge contents. Examples include Wikipedia and Yahoo Answers. The revenue model for an organiser infopreneur is mainly based on online advertisements and public donations.
- **Collaborator:** A collaborator offers a software platform to people and companies to develop application programmes and share with others. Examples include Yahoo Widget, Google Android, the Apple Store, Windows Store and the Nokia Ovi Store. Revenue models for the collaborator infopreneur include selling the platform to develop applications, renting applications developed by companies/individual users, offering professional and maintenance services, or even customer sale behaviour patterns collected via the application framework.
- **Liberator:** A liberator offers open-source platforms that allow users to download free software and modify the software to meet their operational needs. Linux, MySQL, Mozilla foundation, WordPress, CentOS and PrestaShop are popular examples of a liberator. Revenue models for the liberator infopreneur include licensing for commercial purposes and web-based advertisements, and providing support and professional services, such as training, consulting, customised development, and post-sales support.
- **Exchanger:** An exchanger offers a platform for exchanging information between users. Skype and Microsoft MSN are popular examples of exchanger applications. Revenue models for an exchanger infopreneur include online advertisements and voice transfer fees.

4. Competencies of infopreneurship

The competencies of an infopreneur define infopreneurship. The competencies required for infopreneurship are a holistic view of whom an infopreneur is and how aspirants' characteristics should be developed and enhanced (Man *et al.* 2008, 258; Mojab *et al.* 2011, 438). To this end, one can only be considered an infopreneur when he or she possesses some of the competencies identified in extant literature. Owing to the high failure rate of SMMEs in South Africa (Leboea 2017, 3; Fatoki 2014, 926; Musandiwa 2014, 13; Naude and Chiweshe 2017, 3; SBP 2014, 2), it was determined that the role and competency of owners of SMMEs (infopreneurs) are intrinsic to the survival and success of their infopreneurial enterprises (Bendary and Minyawari 2015, 23). They are the embodiment of individual elements that allow the infopreneur to succeed in business (Sarwoko *et al.* 2013, 32).

Due to the large number of competencies involved in infopreneurship, Man *et al.* (2002, 132) categorise them into six different classes, encapsulating all the competencies of infopreneurship, i.e. opportunity competencies, relationship competencies, conceptual competencies, organising competencies, strategic competencies, and commitment competencies. Though comprehensive in nature, Man and co-authors' model was compressed into two classes, i.e. specialised business skills, and specialised technical skills (David and Dube 2013, 262; Ivwurie and Ocholla 2016, 332).

4.1 Specialised business skills

Ivwurie and Ocholla (2016, 332) consider these types of skills “prerequisite for working as an infopreneur”. Coulson-Thomas (2001, 233) posits that these skills are likely to make an infopreneur more successful as they are concerned with the operation and functionality of the business. The study by Dewah and Mutula (2016, 6) noted the significance of the specialised business skills. In a study conducted by David and Dube (2013, 266), some students indicated that it is the “*business skills that could enable them to start small information selling/marketing enterprises.*” These skills encapsulate five types of competencies noted by Man and co-authors: opportunity competencies, relationship competencies, organising competencies, strategic competencies, and commitment competencies (Man *et al.* 2002, 132).

- **Opportunity competencies:** This category of competencies is about spotting opportunities, actively seeking out new opportunities, and developing them into a market value (Li 2009, 10). According to Yu (2001, 52), established and aspiring infopreneurs possessing these competencies are always alert and brainstorming, continually scanning the environment by observing and analysing new political, economic, societal, and technological trends in the society.
- **Relationship competencies:** Relationship competencies relate to person-to-person or individual-to-group-based interactions, such as building a context of cooperation and trust, using contacts and connections, persuasive ability, good negotiation, communication, listening, and interpersonal skills. Linking these competencies to the opportunity recognition competencies indicates that these relationships are not haphazard but rather strategically chosen for the benefit of the venture (Man *et al.* 2002, 132).
- **Organising competencies:** Organising competencies relate to the allocation of resources for profitability and the organisation of different internal and external human, physical, financial, and technological resources, including team-building, leading and managing employees, training, controlling, budgeting, planning, marketing/selling, accumulation of management, business site/location selection skills, pricing, and technical and industry skills

(Bendary and Minyawawi 2015, 28-30; Camuffo et al. 2012, 62; Man et al. 2002, 132; Robles and Zarraga-Rodriguez 2015, 829-831).

- **Strategic competencies:** These competencies relate to setting up, evaluating and implementing the firm's strategies while calling for abilities and skills from broader and long-term perspectives (Man *et al.* 2002:132). Strategic competency also encompasses developing a vision and strategy, systematic thinking skills, planning, writing business plans, setting company goals and standards, market pattern recognition skills, selling ideas (achievable and realistic), and the ability to assess and link short-term, day-to-day goals and tasks in the context of long term direction (Bendary and Minyawawi 2015, 28-30; Camuffo et al. 2012, 62; Man et al. 2002, 132; Robles and Zarraga-Rodriguez 2015, 829-831).
- **Commitment competencies:** Commitment competencies drive the entrepreneur to move ahead with the business. These competencies demonstrate the strong motivation to compete, the drive to see their ventures through to fruition, and the capacity to make an impact. Other characteristics include perseverance, determination, self-confidence, willingness to learn, professionalism, knowledge of the business environment and its customers, positive information culture and attitude, ability to build and maintain trust and confidence with clients and business partners, reliability and dependability, ambition, initiative, enthusiasm, dynamism, high ethical standards, curiosity, relentlessness, diligence, restlessness, and willingness and ability to work long, hard hours (Bendary and Minyawawi 2015, 28-30; Camuffo et al. 2012, 62; Li 2009, 11-12; Man et al. 2002, 132; Robles and Zarraga-Rodriguez 2015, 829-831).

4.2 Specialised technical skills

Like specialised business skills, these skills are necessary to translate infopreneurs' initiatives into real businesses (David and Dube 2013, 268). To Ivwurie and Ocholla (2016, 332), they are fundamental to infopreneurship and afford greater chances of success. These competencies relate to different conceptual abilities, which are reflected in the behaviours of the entrepreneur, such as decision-making skills; gathering, absorbing and understanding complex information; identifying deficient knowledge situations; selling target-based information products and services; troubleshooting skills; industry or subject-related skills; risk-taking; and innovativeness (Man *et al.* 2012, 132). From the description above, it was established that the specialised technical skills of an infopreneur are linked to the areas of infopreneurship. Industry or subject skills, in particular, are critical to the success of an infopreneurial venture (David and Dube 2013, 263; Ocholla 1998, 94). To be specific, if an infopreneur's area of infopreneurship is web development, that implies that he/she has web development skills or has human resource management skills to recruit someone with web development skills. For example, for IT-related

infopreneurs, technology skills are the most important. For a complete list of skills, see Table 1 and Section 3.

5. Challenges of infopreneurship

Infopreneurs in South Africa are exposed to various challenges relating to finances, infrastructure, skills and talent, socio-cultural factors, administrative regulations and government policies, and privacy and identity (Fisher and Kunaratnam 2007, 11; Gwija et al. 2014, 15; Ivwurie and Ocholla 2016, 334; Omidyar Network 2013, 4; Samitowska 2011, 46). Quintessentially, these challenges are both internal and external (Samitowska 2011, 46), as discussed below.

- **Lack of Finance**

Casson as quoted in Olawale (2010, 89) is of the view that the need for capital is a challenge common to all self-employed persons. Lack of capital impedes proper functioning and stifles the growth of a business, turning a dream into a complicated 'nightmare' (Legas 2015, 30). The lack of finance or access to finance is considered "the most effective obstacle" to developing an infopreneurship (Samitowska 2011, 45; Smith and Beasley 2011, 737). According to Pretorius and Shaw as quoted in Olawale (2010, 90), a large percentage of the failure of entrepreneurial ventures in South Africa is attributed to inadequate capital structure or resource poverty. Omidyar Network indicates that the supply of and access to capital are critical to stimulating infopreneurship (Omidyar Network 2013, 4). Yet, the International Finance Corporation estimated that up to 84% of SMMEs in Africa are either un-served or underserved (Omidyar Network 2013, 4).

In a study by Legas (2015, 29), it is stated that "*getting finance is prevailed as quite a big challenge for entrepreneurs in Sub-Saharan Africa.*" Financial institutions are the named as the main reason behind this challenge (Gwija et al. 2014, 15; Kaburi et al. 2012, 270; Legas 2015, 30; Samitowska 2011, 45). However, the Omidyar Network (2013, 5) points out that the fault also lies with entrepreneurs, indicating that financiers have noted a lack of fundable business plans, pointing to issues ranging from failure to depicting the business's profitability and commitment on the part of the entrepreneur. Furthermore, according to Olawale (2010, 90), the South African government is committing a great deal of effort to support the development of graduate entrepreneurship in South Africa. Government agencies such as Accelerated and Shared Growth Initiative for South Africa (AsgiSA), Small Enterprise Development Agency (SEDA), and National Youth Development Agency (NYDA) are examples of agencies created by the government to grant start-up funding to aspiring entrepreneurs. Despite this, Olawale and Garwe (2010, 733) have determined that most new SMMEs "perceive that they do not get enough support from the government". Some also argue that corruption impedes these organisations from fully supporting aspiring infopreneurs; for instance, aspirants are sometimes expected to bribe officials to process funding applications (Legas 2015, 31; Ngorora and Mago 2013, 3).

- **Administrative regulations and government policies**

According to Legas (2015, 25), effective and efficient governmental regulations give entrepreneurs a better chance at success, while tougher regulations stunt the growth of infopreneurial undertakings (Legas 2015, 25). It can thus be inferred that the

government's policies and regulations are a key factor in determining the fate of SMMEs. One recurring obstacle infopreneurs often cite is the complexity of legislation (David and Dube 2013, 268). Aspiring infopreneurs in a Kenyan study indicated that it would be easier to start and run a business if only the business registration process were simplified (Kaburi *et al.* 2012, 270-271). Aspiring infopreneurs in South Africa likewise indicated that the process of registering a business was too complex and the cost too high for those without capital (Olawale 2010, 92). Hence, infopreneurial undertakings in countries with favourable policies and regulations are more likely to thrive.

Auriol (2013, 9) confirms that excessive or inappropriate government regulations significantly hinder infopreneurship. In an Omidyar Network study, South African entrepreneurs indicated that the complexity of legislation in South Africa, coupled with the harsh penalties imposed for non-compliance, significantly constrained new entrepreneurial ventures (Omidyar Network 2013, 42). According to Legas (2015, 26), this has further fuelled social problems such as corruption, nepotism, and the rise in the number of informal (unregistered) enterprises (David and Dube 2013, 268; Kaburi *et al.* 2012, 269; Legas 2015, 42; Omidyar Network 2013, 14). Ocholla (1998, 87-88) believes that a formal or registered business portrays more commitment than unregistered or informal ones. Gwija *et al.* (2014, 15) therefore warn that unless restrictive labour regulations and the government bureaucracy and red tape related to setting up and managing a business are revised, aspiring infopreneurs will be discouraged from formally setting up their businesses and simply resolve to engage in informal infopreneurial activities.

- **Lack of infrastructure**

Another challenge encountered by infopreneurs, in developing countries in particular, is the lack of infrastructure (SEDA 2016, 7). The lack of adequate infrastructure is the reason most start-up businesses fail (Pretorius and Shaw as quoted in Olawale 2010, 90). Omidyar Network (2013, 11) states that the poor state of infrastructure across sub-Saharan Africa is a significant obstacle to the growth of entrepreneurial enterprise; it severely affects entrepreneurs' costs, market access and efficiencies across sub-Saharan Africa is a significant lack of transportation, inadequate power supply, and poor telecommunications infrastructure inhibit growth. Studies by Ekeledo and Bewayo (2009, n.p); Iwurie and Ocholla (2016, 335); and Legas (2015, 28), among others, have found that the basic physical infrastructure required for economic development, such as good roads, ample power, good rail and river transportation facilities, and information and communication technology (ICT) infrastructure, are in a very poor shape in most African countries.

The South African ICT sector, in which infopreneurial undertakings play a big part (Oduwale and Onatola 2008, 63), is one of the best sectors in Africa (International Telecommunications Union 2018; Independent Communications Authority of South Africa (ICASA) 2018, 49). However, the digital divide between urban areas and rural areas indicates that ICT infrastructure in rural areas is neglected (Bornman 2015, 275-277). Furthermore, the data fees are not the cheapest in Africa; it is ranked the country with the 3rd most expensive data prices among BRICS countries (ICASA 2017, 52-58). Infopreneurial businesses mostly rely on ICT infrastructure because infopreneurship is made possible by technology (Buda *et al.* 2011, 33; Iwurie and Ocholla 2016, 339). Therefore, it is significant for infopreneurs, particularly aspirants

and entrants, to consider this barrier, as it can impact their businesses (Oduwole and Onatola 2008, 63).

- **Identity**

The nebulous nature of information and the diverse information needs of clients have resulted in a complex breed of infopreneurs who provide a wide range of information products and services (Onaade 2012, 16). Some even go beyond their areas of specialisation (Ocholla 1998, 87,93), indicating that just as entrepreneurship is interdisciplinary (Kuratko *et al.* 2016, 15), so is infopreneurship. Thus it attracts diverse practitioners from various fields (Du Toit 2000; Ivwurie and Ocholla 2016). To reiterate, these practitioners are referred to by different names and in different ways, the most common being infopreneurs (Amin *et al.* 2011; Batthini 2014; Coulson-Thomas 2001; David and Dube 2013; Du Toit 2000; Garnsworthy 2009; Infopreneur 2017; Ivwurie and Ocholla 2016; Lahm and Stowe 2010; Oduwole and Onatola 2008), independent information professionals (Association of Independent Information Professionals (AIIP) 2000; Pavisich 1988) or information brokers, information consultants and information counsellors (Elisha 2009; Fisher and Kunaratnam 2007; Ocholla 1998; Ocholla 1999; Onaade 2012; Pavisich 1988). Although it can be argued that it is of no significance what they are called (AIIP 2000, 2), the lack of a name that encapsulates those in the business of providing information related products and services is considered to affect their identity negatively. In other words, it presents challenges that undermine their legitimacy and true value; robs them of validation and a sense of belonging; and stifles the sector's ability to grow (Fisher and Kunaratnam, 2007, 13). A participant's reflection in a report by Fisher and Kunaratnam (2007, 13) states "sometimes we are struggling to find our identity, and sometimes we align ourselves with things that are a bit like what we do, like research communication and knowledge management that are bigger than us. There was great validation, and sense of identity from being a group focused on the core of what we do." This statement shows the real value of identity to practitioners in this sector (Fisher and Kunaratnam 2007, 13).

Concurring, Ocholla (1998, 93) argues that identity is intrinsically linked to the survival of infopreneurship. Ivwurie and Ocholla (2016, 338-339) are of the view that the lack of a universally acceptable name is "likely to cause problems in mapping and auditing information-related businesses". While conducting his study in Botswana, Ocholla struggled to identify infopreneurs because of the lack of documented information concerning their existence (Ocholla 1998, 85). It should be noted that Ocholla's encounter occurred almost two decades ago, yet considering claims by Fisher and Kunaratnam (2007, 13) and Ivwurie and Ocholla (2016, 338-339), it can be inferred that this is still the case in South Africa.

- **Crime**

Currently, South Africa is faced with several socio-economic challenges that negatively affect businesses, such as high unemployment, crime, poverty, income inequality, corruption and HIV/AIDS (Oyelana and Fiseha 2014, 687). Olawale and Garwe (2010, 733) postulate that crime is one of the highest deterrents to venturing into business. Direct and indirect impacts, ranging from physical and monetary harm to psychological harm (McDonald *et al.* 2008, 69-73), can deter aspiring infopreneurs

from venturing into business (Olawale 2010, 88; Oyelana and Fiseha 2014, 688-689). Crime also affects a small business's customer attraction and productivity (Oyelana and Fiseha 2014, 677). Therefore, it is paramount that the government partners with organisations, such as Business against Crime South Africa and Business Unity South Africa, to reduce crime (Olawale 2010, 93).

- **Lack of requisite skills**

Infopreneurship is a discipline/enterprise undertaken by one who possesses and presents a unique set of skills and talents. A study conducted by Omidyar Network focusing on six (6) sub-Saharan countries found that only 9% of the entrepreneurs from South Africa believed that they possessed the right set of skills for their businesses (Omidyar Network 2013, 8). Gore and Fal (2010, 7), speaking during the First National Bank of South Africa and Endeavor State of entrepreneurship conference, noted that entrepreneurial skills in South Africa are “severely lacking”. Other studies have established that some South African infopreneurs lack specialised talents and skills (Olawale 2010, 90) and the knowledge of their area of speciality (Ivwurie and Ocholla 2016, 335). Specifically, most infopreneurial businesses require individuals with ICT skills (Ivwurie and Ocholla 2016, 337). Javier *et al.* (2012, 9) likewise note that the gap in the level of ICT skills in Africa prevents most infopreneurs from succeeding in their ventures. To be specific, the ICT skills gap between urban and rural South Africa inhibits tapping into social and economic integration (Choung and Manamela 2018, 192; Gillwald *et al.* 2018, 22).

Another skill that impacts most infopreneurship start-ups negatively, when lacking, is management skills (Agbenyegah 2013, 199). Crucial managerial skills, such as effective business plan writing and budgeting, are lacking amongst infopreneurs (David and Dube 2013, 268). Olien (2013, 1) postulates that not all infopreneurs are capable of spearheading a successful high-growth business venture. Hence, an infopreneur needs to determine the strengths and weaknesses/gaps of the existing team and ensure that the weaknesses are strengthened (Omidyar Network 2013, 9).

Gwija *et al.* (2014, 16) highlight the challenge of attracting appropriate skilled and talented professionals. The lack of finances to hire a skilled workforce and an inadequate education system that fails to produce progressive infopreneurs are considered primary underlying factors behind this challenge (Legas 2015, 31; Omidyar Network 2013, 9). It is therefore recommended that infopreneurs should break away from the status quo of dependency (with regard to funding) that is already prevalent in South Africa (Kazela as quoted in Olawale 2010, 90; Khumalo and Nkala 2015, 69) and seek alternatives that do not require monetary remedies to outsource the relevant skills to help scale the business; that is, infopreneurs can invest in training existing staff to acquire the requisite competencies (Omidyar Network 2013, 9).

- **Privacy**

According to Amin *et al.* (2011, 20), privacy, copyright and intellectual property rights present challenges to everyone working with information. Amin *et al.* (2011, 20) warn that some of the information that infopreneurs work with might be of commercial value, and as a result, should be respected as such. Therefore, while infopreneurs promote and leverage access to information, they should not forget to uphold information ethics, especially as they constantly collect and rework information of which others hold the copyright (Fisher and Kunaratnam 2007, 11).

Ivwurie and Ocholla (2016, 326) explain that copyright laws protect the information products and services produced by individuals and companies in the information sector. David and Dube (2013, 268); Elisha (2009, 30); Ivwurie and Ocholla (2016, 335); Oduwole and Onatola (2008, 63), are all in agreement that aspiring infopreneurs and seasoned infopreneurs ought to carefully avoid copyright and intellectual property rights infringements.

6. Conclusions

The review of literature has established that central to all infopreneurship research, three themes appear to be prevalent: determination of whether or not infopreneurship can be an employment option for LIS graduates, the infopreneurship spirit of LIS students and graduates, as well as students' perception of infopreneurship and an infopreneurship enabling curriculum. This article has established that infopreneurship, as part of the information sector, is practised in South Africa, though misperceived as entrepreneurship by the general populace and some of those involved in it. This impedes the growth and development of the sector and inhibits aspirants, particularly LIS students and graduates, from considering it an employment option due to its obscure image. Literature points out that infopreneurship is entrepreneurship. Nevertheless, a clear distinction between the two allows infopreneurship to be understood for what it is and the benefits and opportunities it presents. Furthermore, the relationship between infopreneurship, entrepreneurship, SMMEs, information brokerage, and information consultancy, as established by the conceptual framework, presents an opportunity for infopreneurs that had no idea they were infopreneurs, to refer to themselves as such. This will allow for the mapping and auditing of infopreneurship to have a better understanding of how considerable it is, alongside the benefits and opportunities it offers.

Further research on infopreneurship is needed. The majority of LIS research focuses on whether or not infopreneurship can be a job option for LIS students and graduates. Studies by Amin et al. (2011); Elisha (2009); El-Kalash et al. (2016); Garnsworthy (200); Ivwurie and Ocholla (2016); Ocholla (1998); Ocholla (1999); Oduwole and Onatola (2008); Onaade (2012), focused largely on determining or validating the idea that infopreneurship can be an employment option for (LIS) graduates. There are also studies on infopreneurship, focusing mainly on the infopreneurship intentions of the students, students' perception of infopreneurship and an infopreneurship-enabling curriculum. These are studies by Coulson-Thomas (2001); David and Dube (2013); Du Toit (2000); Dewah and Mutula (2016); Khumalo and Nkala (2015). Of all these studies, only studies by Ivwurie and Ocholla (2016); Ocholla (1998); and this current one have focused on infopreneurs themselves. Therefore there is a need for more research from different regions focusing on infopreneurs and infopreneuring. Furthermore, generally, the greatest challenge in conducting an infopreneurship literature review is the limited amount of information sources accessible to use. As a result, some sources were re-used and some were old. If this is the case, it can also be conjectured that infopreneurship professors and students are encountering similar

challenges of having to use old information sources in their classes. Thus, there is clearly an urgent need for more research.

The results of this study will no doubt be useful to further research on infopreneurship. This can consequently have a great impact on the LIS curricula and improve the image of infopreneurship among students and researchers alike. With the mapping and auditing of infopreneurship, the government may also consider infopreneurship as one of its solutions towards graduate unemployment.

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