



Digital Business towards an Academic and Professional Degree: An International Perspective

P. K. Paul¹, A. Bhuimali², Kalishankar Tiwary³, P. S. Aithal⁴, R. Rajesh⁵

¹Raiganj University (RGU), West Bengal, India

²Vice Chancellor, Raiganj University, West Bengal, India

³HoD, Mathematics & Director-IQAC, Raiganj University, West Bengal, India

⁴Vice Chancellor, Srinivas University, Karnataka, India

⁵Principal, Rohini College of Engineering and Technology, TN, India

Corresponding Author: pkpaul.infotech@gmail.com

Abstract

Digital business is one of the important and valuable industries' name today and it is the combination of business and IT components and its uses. The application of digital technologies or IT Applications in the business and organizations in contemporary age is also called Digital Business. Digital Business plays a leading role in the behavior study of the consumer of organizations. Different kind of professionals of an organization and company viz. directors, executive members, general professionals, people etc have great role in the applications and in Digital systems into their system. Ultimately these help in better relationship with the customers, collaborate and business operation and thus it is a people-centric approach and also processes to enable different stakeholders viz. customers, employees, managers, etc. Hence it is about the employing different kind of IT and Computing products, tools and technologies in the current age for promoting business functions. Hence a Digital Business is about making digital business venture and also making digital environment of an enterprise and corporate bodies. The interconnections and ecosystem of an organization and companies become perfect with the help of Digital Business and it is for the betterment of the corporate houses and thus digital business also helps in common people and to work effectively. This is important to note that in recent past Digital Business has becomes a field of study due to its importance and applications in different areas. The leading universities internationally are offering a different kind of programs leading to a degree in the field of Digital Business. In this paper, a case study cum policy based research is considered emphasizing Masters program in Digital Business.

Keywords

IT Applications, Digital Business, Universities, MSc, Higher Education, Digital Innovations, Business Promotion.

Introduction

Digital business community normally comprises the internal community and also external community and it is responsible for today's business houses for reaching new heights and thus here a new space has been created with professionals. It is important to note that Digital Business normally played by the individually or jointly. Here different kind of professionals viz. CIO, CTO, Systems Manager,

User Experience Designer, Business Analyst etc have played a leading role in designing, developing and maintaining of Digital Business. Hence in the current age digital technologies are using a different kind of stakeholders' viz. customer, employees, and top level management [1], [5]. The general components of IT such as Networking, Web Technology, Database Technology etc are using the business houses and also some other allied technologies viz. User Experience Designing, Analytics, Cloud Computing, Internet of Things (IoT), and Big Data Management. There is no exact and good definition and opinion in this regard and according to the experts (such as Accenture, Gartner, McKinsey etc) and organizations, the concept of Digital Business differs.

Accenture declares that “Digital businesses create competitive edges based on unique combinations of digital and physical resources. They do things that others cannot and in ways that build a comparative advantage.” Whereas Gartner says “Digital business is the creation of new value chains and business opportunities that traditional businesses cannot offer”. Similarly “Digital should be seen less as a thing and more a way of doing things.” This justification explained by the industry giant *McKinsey*.

Internationally universities have moved into different initiatives on offering new age programs combine with business and information technology. And here the important step valuable in introducing new age program is the usage of the nomenclature of Digital Business and other allied areas viz. Business Informatics, Digital Marketing, Electronic Business etc. In Asian countries, it is little available, but in European universities, it is common and widely available.

Objective and Agenda

The paper is conceptual and it deals with various aims in Digital Business context and among these few important are—

- To learn the fundamentals of business and management and different types of forms in a simple manner.
- To know about the components of Information Technology which are useful in Business and Corporate segments.
- To learn about the emerging fields of Information Technology and development and growth of Digital Business as an area and field in International Context.
- To learn about the different forms and deployment models of Cloud Computing and emerging/related areas.
- To identify the characteristics and nature of Digital Business in simple manner with reference to emerging technologies.
- To learn about the stakeholders of Digital Business in current context with special reference to the educational programs available in this field.
- To learn about the brief overview of course components and curriculum of MSc-Digital Business components.

Methods

The present research work is conceptual in nature and mainly deals with the aim and agenda of learning emerging technologies in respect of Digital Business and its various facets. It is also responsible for learning stakeholders, gradients, and features. The study is based on the review of the literature and thus it is planned to know about the nature, features, and characteristics of the Digital Business. The present study also used web sources especially the area of educational opportunities in this field, which has started internationally in different universities. Among the international universities a majority of European and German Universities, have started programs on Digital Business and that is growing rapidly.

Digital Business? What is It?

Information Technology has a vast syllabus and it is composed of Database Technology, Web Technology, Networking Technology, Multimedia Technology, Communication Technology etc. It is worthy to note that within 2020, more than seven billion people have been associated with the businesses and the worthy fact is about 30 billion devices may be associated with the Internet and similar systems [2], [3], [8]. Digital Business is responsible for the connection with the people, businesses and transacting etc and thus for better and healthy connections and responsibility educational organizations and educational institutions are playing a lead role in this regard for the creation of new age manpower and human resource. Moreover newer business and creation of solid business and technological strategies are also possible with the Digital Business. The solid digital business promoted the convergence of technologies, people, business and a good sustainable business model including e-business and e-commerce.

Digital Business is an emerging concept and very much close with the E-Business though differences also exist. Digital Business is always responsible for the promotion of newer business and it is also dedicated to the intelligent business organization creation. It is worthy to note that irrespective of the form of an organization, Digital Business may be applied. Digital business is responsible for the integration of digital and physical systems of business and it is responsible for blending the boundaries of these two. Digital Business is responsible for the effectiveness and productiveness is another criterion for the development. Real-time business and modern businesses are many ways possible with the Digital Business [4], [6], [10].

Information Technology is growing rapidly and here several components are emerging and among these few important are include Cloud Computing, Internet of Things, Big Data—all these are responsible for the digital business models. Internet of Things (IoT) is dedicated for the better and healthy digital business and *'it is the network of physical objects that contains various embedded technologies to communicate and interact with internal states or the external environment'* (Gartner). Hence it would help in gearing up business (both tangible and intangible in nature).

Digital business is helpful for the creation of new business designs with various IT tools and responsible for the creation of the healthy digital world. The integration of business, technologies and information is ultimately the core stakeholders of Digital Business. The scenario of business and commercial affairs is noticeable and important to follow—here also Digital Business plays a good and important role [8], [11], [12].

Technology enable advance management helps in a healthy relationship and working affairs between business executives, managers and professionals, CTOs, CIOs and so on and here decision maker may have the important benefits; ultimately these help in faster improvement [7], [15], [19].

Digital Business and Allied Areas

Digital Business is an intersection and interconnection between digital stakeholders and business in a broad sense. It is the combination of information, technology, and business as well. Digital Business is very much close to the following areas and facets—

- Electronic Business
- Electronic Commerce
- Digital Marketing etc.

The concept of *Electronic Business*, was emerged initially while dealing with the integration of electronic means of business affairs/ stakeholders. It is the art and practice of business with electronic means and systems. It is dedicated to the applications of new age tools and technologies into Business in different sorts. It is moreover also available as an advanced concept and area as E-Commerce. The *E-Commerce* is a broader area within this stream. There are different kinds of governmental regulations and forms available for the E-commerce. The E-commerce has a different kind of impact

on logistics, market and retailers, and supply chain management. E-Commerce moreover may have different types of channel viz. websites, mobile apps, PC apps, Live Chats etc. There are different kinds of E-Commerce platforms viz.

- On-premises E-commerce
- Software as a service E-Commerce
- Fully Managed E-Commerce
- Open Source E-Commerce

Related to E-Commerce and as an important area, **Mobile Commerce** (M-Commerce) is valuable. It is about the use of mobile phones and applications for the purpose of business and other related affairs [9], [13],[14]. Mobile Commerce market internationally reached 230 Billion USD and importantly half of the market share belongs from Asia. While Mobile Commerce is responsible for the following types of business attributes viz.—

- Mobile Money Transfers
- Mobile Ticketing
- Mobile Vouchers and Coupons etc
- Content Purchasing
- Information Service
- Mobile Banking
- Mobile Brokerage/ Mobile Browsing/ Mobile Purchasing etc
- Mobile Advertising and Marketing [14], [16], 17]

The latest within the field is **Digital Marketing**. Marketing and advertisement of products and or services with the help of digital technologies viz. internet, mobile phones, display advertising etc are together called Digital Marketing. It has originated in 1990s and in 2000s the traditional concept has been changed rapidly. Today a large number of organizations are using technology for marketing of different objects that include products, services etc. Marketing in current age is using good number of digital space and today common people are also using digital devices, tools and technologies for the marketing and similar events. The physical shops and online or electronic both are using digital marketing as an important and valuable tool. Numerous methods as well as technologies are currently using in Digital Marketing areas (and among these few important include)—

- Search engine optimization (SEO)
- Search engine marketing (SEM)
- Social Media Optimization etc
- Content marketing and Automation
- Campaign marketing
- Data-driven marketing etc.

Digital Business vis-à-vis Stakeholders

Digital Business is framed with technologies and business elements and thus Computing (IT) and Management both are valuable part of Digital Business. Digital Business in today's context may be considered with the following elements and facets (but not limited to)—

- Information
- People
- Business/ Corporate Houses
- Services
- Technologies
- Tools and Products

Information is the core and main source of communication. It mainly deals with the contents of different kinds and forms and size. Like any other situation, Business houses and corporate houses

require information and thus it is an important and most valuable content. **People** is another important and valuable stakeholders, it is the core of the organization and business; without this business cannot happen. It is worthy to note that people requires for two stands, *first* consumers or customer and *second*, service providers and manpower. **Business** is the main stakeholder in Digital Business, it includes the organizational and institutional bodies; both physical and electronic. A Business may be a profit making or nonprofit making based. Digital Business is for the offering facilities and services and thus **Service** is another most important and valuable criteria. Services may be tangible and intangible as well. The current business houses are using latest systems and tools and the business houses may be physical or may not be. Hence in this context service is an important feature. Apart from these another important stakeholder in Digital Business is **Technologies** and this may include different kind viz. Database Technologies, Networking Technologies, Communication Technologies, Multimedia Technologies, Software Technologies and so on. In recent past many other emerging technologies have been emerged (many of these are within the specified technologies) such as—

- Cloud Computing
- Virtualization Technology
- Animation and Visual Effects (VFX)
- New Dimensions including 3D
- Human Computer Interaction (HCI)
- User Experience Designing (UXD)
- Usability Engineering & Interaction Designing
- Information Architecture
- Information Security
- Cyber Forensic & Security
- Big Data Management
- Data warehousing & Mining
- Data Analytics etc

These kinds of technologies are budding in recent past and also growing rapidly with other different kind of attributes. Naturally these technologies are using different kind of **Tools and Products (equipments)** and thus it is also an important criterion and stakeholders within Digital Business. Among the tools and products most important and available are Computer, Laptops, Communication Devices including router, switches, hubs etc. Analytical products and UXD supported tools and products etc [7], [9], [18], [19].

International Universities and Digital Business Program: An Academic Innovations

Information Technology is an important field of study concentrated on applications of IT and Computing tools in the Business and corporate houses. It is in another context known as a combination of IT and Management Sciences. Initially, only Database Technology, Web Technology, Networking Technology, Multimedia Technology, Communication Technology etc treated as the components of IT and gradually other application/ field specific fields were emerged viz. E-Business, E-Commerce, E-Learning etc. Though, in recent past, other areas have been added into this viz. Digital Marketing/ E-Marketing and most recently Digital Business area. It is worthy to note that in many countries Digital Business has also been started as an educational programs leading to Bachelors and Masters Degree. According to this study, only Masters Degree have been studied and it has noted that the field ‘Digital Business’ is available as an MSc and MBA nomenclature.

Internationally many universities have started the program in the Business schools and most of these schools have started the program in collaboration with the Engineering/ Technological/ Computational Schools. Among the Schools, few popular and important include—

- SKEMA Business School
- Global Business School, Barcelona

- HEC Paris
- Irish Management Institute
- Grenoble School of Management
- ICD International Business Paris
- Edhec Business School.

Table: 1-Showing Masters program in Digital Business in International Universities

Sl. No.	Name of the Program	Institute/ University	Remarks	Country
1	MSc (Digital Business)	University of Southampton	Bachelors (Any)/ 2 Year	UK
2	MSc (Digital Business, Data Analysis & Management)	SKEMA Business School	Bachelors (Any)/ 1-2 Years based on Duration on Previous Degree	France
3	MSc (Digital Business)	Grenoble School of Management	Bachelors (Any)/ 2Year	France
4	MSc (Digital Business)	Irish Management Institute	Bachelors (Any)/ 2 Year	Ireland
5	MSc (Digital Business)	University of Westminster	Bachelors (Any)/1-2 Year	London
6	MSc (Strategy & Digital Business)	European Identity Global B School	Bachelors (Any)/ 2 Year	Germany
7	MSc (Management & Digital Business)	Liverpool John Moores University	Bachelors (Any)/ 2 Year	England
8	Master of Digital Business	University of Waikato	Bachelors (Any/ Management Sciences & Information Sciences are preferred)/ 2 Year	New Zealand
9	Master in Digital Business	Global Business School, Barcelona	Bachelors (Any)/ 9 Months	Spain
10	MSc-International Management (Digital Business)	Teesside University	Bachelors (Related Fields)/ 1 Year	England
11	MSc (Design & Development of Digital Business)	Cork University	Bachelors (Related or Any)/ 1 Year	Ireland
12	Master in Management (Digital Business)	HEC Paris	Bachelors (Any)/ 18 Months	France
13	MSc (Information Management & Digital Business)	University of Reading	Bachelors (Related or Any)/ 1 Year	England
14	MSc (Digital Business)	ICD International Business Paris	Bachelors (Any)/ 18 Months	France
15	MSc (Digital Business)	University of Innsbruck	Bachelors (Any)/ 2 Year	Austrian
16	MSc (Data Analytics & Digital Business)	Edhec Business School	Bachelors (Any)/ 1 Year	France
17	MSc (Designing Digital Business)	WIFI Steiermark	Bachelors (Any)/ 2 Year	Austria
18	Master of Information Systems (Digital Busin.)	Westerdals	Bachelors (Related)/ 2 Year	Norway

There are many universities which offer the joint nomenclature that comprises following (not limited to)—

- Digital Business, Data Analysis & Management
- Strategy & Digital Business
- Management & Digital Business
- Design & Development of Digital Business
- Information Management & Digital Business
- Data Analytics & Digital Business

While many universities have started to offer Digital Business program (at Masters Level) as a concentration/ major program of study with following style of nomenclature—

- Information Systems (Digital Business)
- International Management (Digital Business)
- Management (Digital Business) etc.

It is worthy to note that the curricula in this regard mixed with IT and Business focused components and some of the curricula components have been noted in table 2 herewith.

Core Attributes of Digital Business Curricula: An Academic Investigation

Digital Business is an interdisciplinary area that comprises with Digital and IT components and business components or in other words applications and integration of IT and Digital Technologies for the Business houses, operation and services. It has been studied that a major universities prepared the syllabus of Digital areas which are conceptual in nature and Business areas. Though some of the universities have started programs with courses from the Core of IT viz. Web Architecture, Cyber Security, Big Data and while few have mixed these components nicely to prepare consultant, professional in IT Business Solutions including for the leading positions of the organizations and companies. The table 2 depicts the model curricula in this regard. All these are depicted only from the Digital Business program/ courses instead of specializations and majors into other related and allied programs.

Table: 2- Masters program in Digital Business in International Universities: Curricula Highlights

Universities	Papers/ Courses
MSc (Digital Business)/ University of Southampton	Digital Business Digital Entrepreneurship Web Architecture Interdisciplinary Thinking Quantitative and Qualitative Research <i>Any 1: Among these</i> Operations Management Innovation and Technology Transfer Internet Intermediaries and Data Protection Law Enforcement of IPR over the Internet <i>Any 1: Among these</i> The Science of Online Social Network Computational Thinking Semantic Web Technologies Open Data Innovations Dissertation
MSc (Digital Business)/ University of Westminster	Big Data Analytics and Business Intelligence Contemporary Issues in Delivery of Digital Business Customers and Competition in Digital Era Cyber Security and Blockchain Technologies Digital Innovation and Disruption Leading and Digital Transmission

	Tools and Technologies for Digital Business Project
Master of Digital Business/ University of Waikato	Contemporary Issues in E Business Applied Research Methods & Project E Business Technologies Managing Virtual Team Communication E Global Business: Strategic Management and Marketing Digital Business Management Professional Field Internship
MSc (Digital Business)/ University of Innsbruck	<p>Digital Fundamentals Area</p> <ol style="list-style-type: none"> 1. Data Analysis using Python and R 2. Artificial Intelligence and Big Data 3. Digital Transformation, Platforms and Blockchain Business 4. Cyber Security and Data Protection 5. Digital Collaboration <p>Digital Firms Area</p> <ol style="list-style-type: none"> 1. Business Process Management 2. Legal & Tax Strategies for Digital Business 3. Business Analytics & Reporting of Digital Business Models 4. Cryptofinance and Financial Technology Business Models 5. Digital Innovations and Transformation 6. Multi Channel Marketing <p>Digital Markets Area</p> <ol style="list-style-type: none"> 1. Competition and Cooperation in Digital Markets 2. The Economics of Information, IT and Human Behavior <p>Digital Society Area</p> <ol style="list-style-type: none"> 1. Organizing the Digital in the Public Sphere 2. Social Media, Regulations and Ethics

Need and Future

The role of Digital Business is emerging day by day and different bodies are moving towards initiation and transition in digital business promotion. The days have been past when computers have been used only for the purpose of internal affairs of computation and information affairs. These days organizations have been transformed from traditional settings to digital one and thus qualified and skilled manpower are very much essential in different sorts. The emergence of Digital Business carried due to various benefits which have been depicted previously. The world is moving towards a new generation of corporatization and here digital means play a leading role.

In future, organizations and institutions need to fulfill their agenda and objective by introducing new age technologies and here Digital Business and allied (including merged) fields have been played a leading role. Hence Digital Business programs may be introduced in other Masters program and may also initiated to the Doctoral and allied programs. Some of the programs may be as follows—

- Master of Business Administration-MBA (Digital Business)
- Masters in Management-MIM (Digital Business)
- Master of Business Studies-MBS (Digital Business)

- Master of Management Studies-MMS (Digital Business)
- Master of Computer Management-MCM (Digital Business)
- Master of Computer Application-MCA (Digital Business) and so on.

These kinds of programs may be started keeping in mind Asian educational systems for better and healthy digital innovations in business and other organizations. The profit making and nonprofit making; both are fully transformed by the proper Digital Business initiation in different kind of organization and here skill manpower creation is important and urgent.

Conclusion

Internationally universities have changed their criteria for the development of business systems and organizations into traditional programs. Educational institutes and organizations are now within a better relationship in terms of technological solutions and delivery. Digital Business is now not only an important name and concept but also it is a research area, domain and field of study. Worldwide different universities have also planned to change their current strategy towards implementing new age program and systems and in this connections European universities did a wonderful job by introducing programs in the field of Digital Business and importantly, most of these programs are industry linked, curricula mapped with the industry. Among the other features instead of the program stream it opens a new vista for the diverse background and candidates for study and research. Though, the program is also available in few countries and territories viz. Australia, New Zealand, USA etc. And importantly in coming years that may also be started in other countries, specifically Asian countries due to the current trends of adopting digital systems into the business among these countries.

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