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# **Ideal Banking Concept and Characteristics**



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### **Abstract**

A bank is a financial intermediary and creates money by lending money to a borrower, thereby creating a corresponding deposit on the bank's balance sheet. Lending activities can be performed directly by loaning or indirectly through capital markets. After the advent of technology and its penetration to all business fields, the responsibility of banks is enhanced to provide better, speedy, and ubiquitous service to the customers so that it can create more money and hence profit. Banks are formulating various strategies in order to attract more deposits and lend it to genuine customers to get a better return and hence make more profit. Based on such objective of a general banking system, the ideal concept of the banking system is developed. The ideal bank is a system with ideal banking characters. In this paper, a model of the ideal banking system is proposed by considering the ideal characteristics expected under input conditions, output conditions, system requirements, and environmental conditions. The factors affecting these characteristics are identified using a qualitative data collection instrument namely focus group method.

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### 1. Introduction

Rogers (1995), Sreelatha & Sekhar (2012), Acharya & Aithal (2016), a bank is a financial intermediary and creates money by lending money to a borrower, thereby creating a corresponding deposit on the bank's balance sheet. A banking system is a group or network of institutions that provide financial services to the society. These institutions are responsible for operating a payment system, providing loans, taking deposits, and helping with investments. Lending activities can be performed directly by loaning or indirectly through capital markets. After the advent of technology and its penetration to all business fields, the responsibility of banks is enhanced to provide better, speedy, and ubiquitous service to the customers so that it can create more money and hence profit. Banking business includes the business of receiving money on current or deposit account, paying and collecting cheques drawn by or paid in by customers, the making of advances to customers, and includes such other business as the Authority may prescribe for

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the purposes of Banking Act of the country. Banking business includes: receiving from the general public money on current, deposit, savings or other similar accounts repayable on demand or within certain days or with a period of call or notice of less than that period; and paying or collecting cheques drawn by or paid in by customers. Automation of banking processes is present day requirement and networking all the branches of the banks through Information communication technology is essential for decreasing the cost of the operation. Aithal (2016), Since banking functions involve the transaction of money between different accounts and due to advents of electronic commerce which need electronic money transactions and payments between different parties, security and authenticity are very important features of present banking operations. The function of banks involves the following:

- 1) Payment of money by conducting checking or current accounts for customers, paying cheques drawn by customers on the bank and collecting cheques deposited to customers' current accounts.
- 2) Banks also enable customer payments via other payment methods such as RTGS, Wire transfers or telegraphic transfer, and automated teller machines (ATMs).
- 3) Banks borrow money by accepting funds deposited on current accounts, by accepting term deposits, and issuing debt securities such as banknotes and bonds.
- 4) Banks lend money by making advances to customers on current accounts, by making installment loans, and by investing in marketable debt securities and other forms of money lending.

#### 2. Research Methods

Banks have two types of products namely retail banking and business banking. Banks formulate various strategies in order to attract more deposits and lend it to genuine customers to get a better return and hence make more profit. A bank can generate revenue in a variety of different ways including interest, transaction fees, and financial advice. The traditionally most significant method is via charging interest on the capital it lends out to customers. The bank profits from the difference between the level of interest it pays for deposits and other sources of funds, and the level of interest it charges in its lending activities. Based on such objective of a general banking system, the ideal concept of the banking system is developed. Choi & Majumdar (2014), Oliveira *et al.*, (2014), Wu *et al.*, (2009), the ideal bank is a system with ideal banking characters. In this paper, a model of the ideal banking system is proposed by considering the ideal characteristics expected under input conditions, output conditions, system requirements, and environmental conditions. The factors affecting these characteristics are identified using a qualitative data collection instrument namely focus group method. Finally, some of the possible technology supported models which support the concept of Ideal banking are identified and analyzed.

### 3. Results and Analysis

### 3.1 Banking System Model

A banking system consists of interconnected many branches and the customers registered in any branch can avail required services in any branch. The banking operations are controlled and monitored by a central bank of the country. A customer can avail designated service either online or physically entering the bank branch. The simplest analogous model to a banking system is shown in fig. 1. It represents the general banking functions discussed in the previous section by integrating various branches through appropriate networking technology. Based on networking of bank branches, a customer can avail any service from any branches of the bank. Using the internet and wireless technology, a customer can avail banking services using electronic banking and mobile banking models.

### 3.2 Model of Ideal Banking System

Woods *et al.*, (2009), Morrison & Roberts (1998), Floh & Treiblmaier (2006), the conventional model of the banking system can be improved in its performance without changing its objectives and functions using electronic communication technology so that the speed, quality, accuracy, and convenience of banking services to its customers will improve to a great extent. To improve any present systems, it is normal practice that such systems have to be compared with a hypothetical, predicted system of that kind called "Ideal system". The word 'Ideal system' refers to the system which has ideal characteristics i.e., perfect in every way. It is what the mind pictures as being perfect. The concept of an ideal engine, ideal switch, ideal voltage source, ideal current source, ideal semiconductor devices like ideal diodes, ideal transistors, amplifiers etc. have been defined and taken as standards to improve the quality and

performance of such practical devices or systems. It is found that, by keeping such hypothetical devices or systems in mind, researchers have continuously been improving the characteristics/properties of practical devices / systems to upgrade their performances. Hence, ideal properties of a device or a system can be used to upgrade or improve its properties towards reaching 100% efficiency. By comparing the properties/characteristics of a practical device/system with Aithal (2016), its ideal counterpart, one can find out the possible modifications in that device /system towards reaching the objective of achieving such an ideal system. Ideal Banking System model by considering various characteristics under 4 categories such as Input conditions, Systems requirements, Output conditions, and Environmental & social conditions, and analyzed these characteristics with an objective to achieve the goal.

Mols (2001), Mols *et al.*, (1999), Morgan & Hunt (1994), an ideal banking system would not only provide ideal banking services to the entire society ubiquitously but would also follow the ideal banking system characteristics to better suit the needs of the people. An Ideal banking system shall have characteristics which can be predicted and classified. Aithal (2016), (2015), based on various factors which decide the ideal banking system characteristics, a model consisting of the input conditions, output conditions, system requirements, and social & environmental conditions is derived by a qualitative data collection instrument namely, focus group method. The block diagram of such a system is shown in fig. 2.

### a) Social & environmental conditions

- 1) The Ideal Banking system provides banking services to the entire world rather than a single neighborhood town/Country and hence, it has an unlimited global reachability.
- 2) Ideal banking offers services to its customers, which enjoys an inelastic demand in the world market (inelastic means a service that people need or desire almost at any price).
- 3) The Ideal banking system provides all types of banking services of both retail banking and business banking to all customers irrespective of their age, gender, previous qualification and country of origin.
- 4) The Ideal Banking system provides high-quality banking services to everybody irrespective of their economic, social, linguistic and cultural background.

### b) Input Banking Conditions

- 5) The Ideal Banking system needs minimum employees in identified areas of operation and must utilize optimum service from them.
- 6) The Ideal Banking system operates on a low overhead. It does not need an expensive location, many branches, and a huge amount of infrastructure. Only a few Banks are required to provide quality service to the entire world.
- 7) The Ideal Banking system does not require major investments in equipment and other infrastructure or repetition of a large number of branches in every state and every country. In other words, it does not require huge capital.

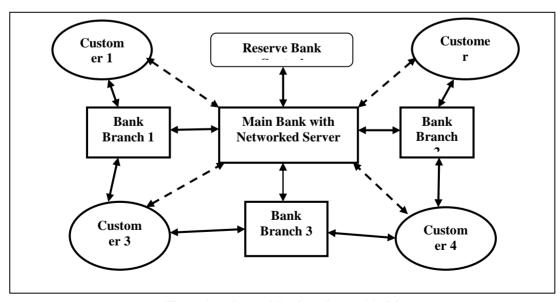


Figure 1. A General Banking System Model

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#### c) System Requirements

- 8) The ideal banking system is relatively free of all kinds of government regulations or restrictions.
- 9) The ideal banking system is portable or easily moveable. This means a customer registered in one bank should be able to get the services wherever he moves and in whichever city he lives.
- 10) The ideal banking system satisfies its customers' intellectual needs. There are no constraints like minimum amount transaction, to be registered or avail services only in one bank, minimum and a maximum number of services availed per day.
- 11) The ideal banking system leaves enough free time to service providers/bank employees as well as customers. In other words, it doesn't require attention/study of 12, 16, or 18 hours a day.
- 12) The ideal banking system is one in which the income of the bank does not limit by a personal output (Leverage) of the bank workers. In the ideal banking system, a bank can provide any number of customers as easily as can have one.
- 13) The ideal Banking system, customers can do transactions at any time, any number of times and results should be declared immediately. There is nothing like wasting time in queue, travel time to the bank etc.
- 14) The ideal Banking system will provide services to its registered customers anywhere, anytime and any amount of time. i.e., it is ubiquitous.
- 15)In an ideal system, the technology is used in such a way that all services of the banking system should be delivered effectively.
- 16) An ideal banking system provides all customers with not only basic knowledge of banking but also on authenticity and security for financial transactions.

### d) Output Conditions

- 17) In the ideal banking system, the demand for a variety of services is higher than supply and the efficiency of the system is always 100%.
- 18) In the ideal banking system, the customers have a choice of alternative in terms of service providers.
- 19) The ideal banking system will be sustainable for a long time.

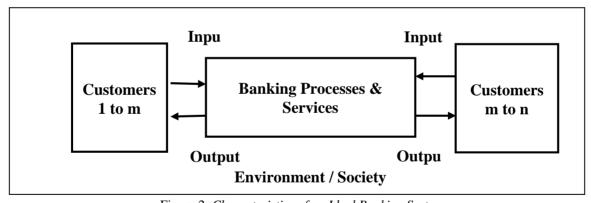


Figure 2. Characteristics of an Ideal Banking System.

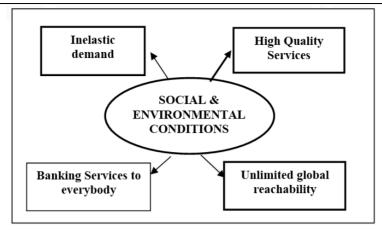


Figure 3. A block diagram representing Social & environmental conditions

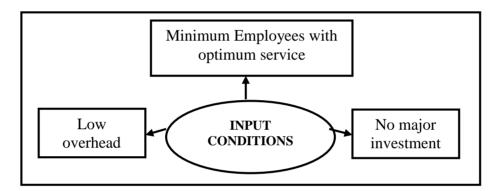
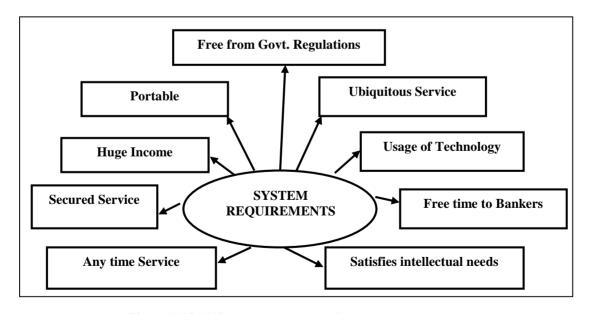


Figure 4. A block diagram representing Input conditions.



 $Figure\ 5.\ Block\ diagram\ representing\ System\ requirements.$ 

Any banking system which has the above properties is considered as ideal banking system and the conventional banking systems called brick and Aithal (2015), (2016), mortar systems have serious drawbacks/limitations in terms of the above properties.

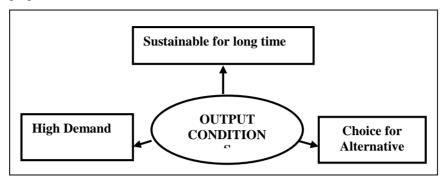


Figure 6. A block diagram representing Output conditions

### 3.3 Analysis of Ideal Banking Characteristics

Ideal banking characteristics can be explained based on their effectiveness in improving the qualities of services and customers comfortability of availing it. Aithal (2015), (2016), the characteristics mentioned in the ideal banking model are depicted in fig. 3 to fig. 6 and further discussed below;

#### a) Social & environmental conditions

- 1) Global Reachability: Any ideal system will sustain for longer period providing services to the larger number of people. The Ideal Banking system provides banking services to the entire world rather than a single neighborhood town which has only a limited number of customers. Hence, the ideal banking system has an unlimited global reachability.
- 2) Inelastic demand: The Ideal banking system offers all required and possible banking services with the highest quality and enhanced values to the customers, which enjoys an inelastic demand in the entire world due to their benefits. In the ideal banking system, the benefits of providing banking services to the customers are always more than the cost incurred to provide it. Similarly, for the customers, the benefits of the ideal banking services are always much more than the cost of availing it. A banking model can be called as an ideal only if it can decrease the distribution cost, distribution time, advertisement cost and production/servicing cost to a minimum level close to zero and capable of supporting the banking services to achieve inelastic demand. Such banking service becomes very attractive to all segments of global customers so that the customers desire to use it at any price which creates inelastic demand.
- 3) Ubiquitous service to every customer:
  - Ubiquitous means being present everywhere simultaneously or existing everywhere at the same time. The very concept behind this is being everywhere and still being virtually inexistent or invisible. The aim of such banking service is to establish an environment where people can always be on-the-go and still carry information and power to solve their problems at their inconvenience, without being bound by the location of any particular technological device. Ubiquitous banking provides solutions and services at any time, anywhere, any amount of time to the users. The Ideal banking system provides all types of banking services of both retail banking and business banking to all customers irrespective of their age, gender, previous qualification and country of origin due to its ubiquitous nature. This helps everybody in the world to have access to higher education in the chosen area irrespective of his/her origin.
- 4) Affordable for everybody:
  - Ideal banking should be so smart, so simple and so powerful that it works for everybody irrespective of their economic, social, linguistic and cultural background. Development and maintenance of such a system should be simple, cost-effective with fewer constraints for implementation. Hence, ideal banking is affordable to

everybody so that it uses common techniques available in nature and manipulate effectively to the need of human being at an affordable cost. Thus, ideal banking system provides high-quality banking services to everybody irrespective of their economic, social, linguistic and cultural background.

#### b) Input Banking Conditions

### 5) Minimum Employee requirement:

Any system can sustain for a longer period by decreasing the cost. The ideal banking system needs minimum employees with specialized skills and must utilize optimum service from them to provide optimum service to the customers. The ideal banking system needs minimum employees in identified areas of operation and must utilize optimum service from them.

#### 6) Low overhead cost:

The total cost of any system is the sum of Fixed cost and Variable cost. The fixed cost involves the initial investment in the development of the system and the variable cost includes maintenance cost of the system. By decreasing initial investment without compromising with quality and by minimizing the maintenance and service cost, the banking system can decrease its overall cost. As per our definition, the ideal banking system operates on a low overhead. It does not need an expensive location, big branch building and a huge amount of infrastructure. Only one office in any location is required to provide banking services to the entire world. Hence, the Ideal Banking system operates on a low overhead. It does not need an expensive location, many branches, and a huge amount of infrastructure. Only a few banks are required to provide quality service to the entire world.

### 7) Low investments:

Out of the various resources used in any banking system, a capital investment like an investment on land, buildings, equipment, and other infrastructures need huge capital. On the other hand, the ideal banking system does not require major investments in equipment and other infrastructure or repetition of a large number of branches in every state and every country. In other words, it does not require huge capital.

#### c) System Requirements

### 8) Free of Government Regulations:

The ideal banking system is relatively free of all kinds of government regulations or restrictions. Many conventional business systems are facing problems due to Government regulations based on the nature of service provided, the environmental issues and the neighboring community issues. These regulations sometimes make the banking systems as a nonprofit or to shut down. An ideal system is relatively free of all kinds of government regulations or restrictions so that it can do sustainable services for a longer period.

# 9) Portability:

The ideal banking system is portable or easily moveable. This means a customer registered in one bank should be able to get the services irrespective of the location of the bank. A good business model should have characteristics to run the business location independent. The business should have the same level of difficulty and performance in terms of productivity, efficiency, effectiveness and hence revenue and profit even if it is performed any corner of the world irrespective of its location and the physical, geographical, political, economic and technical environment. The ideal banking should be perfectly portable or easily moveable from one location to other location based on the interest of its owner and should have the same level of difficulty everywhere. This means the bank should able to provide the specified services anywhere to its customers irrespective of its location.

### 10) Satisfying the intellectual needs of stakeholders:

The ideal banking system satisfies both its owners and customers' intellectual needs. There are no constraints like minimum amount transaction, to be registered or avail services only in one bank, minimum and a maximum number of services availed per day. There should be an opportunity for the owner to develop new services and the customers to surf new services like online trading for investment.

### 11)Less time consumption:

The ideal banking system leaves enough free time to service providers/bank employees as well as customers due to the fact that all banking service decisions are automated and artificially controlled. In other words, it doesn't require attention/study of 12, 16, or 18 hours a day. In addition, the customers and employees need not waste their time for unproductive activities like travel etc.

### 12) Potential opportunity for high income:

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The ideal banking system is one in which the income of the bank does not limit by a personal output (Leverage) of the bank workers. In the ideal banking system, a bank can provide any number of services to any number of customers as easily as can have one. The banking systems must have profit for further progress. There is nothing wrong in expecting huge profit for honest efforts. One of the advantages of the ideal banking system is the possibility of ensuring large profits. This is mainly due to the intangible nature of banking services and scalability.

# 13) Ubiquitous Service:

The ideal Banking system, customers can do transactions at any time, any number of times and results should be declared immediately. There is nothing like wasting time in queue, travel time to the bank etc.

# 14) Anytime Service:

The ideal Banking system will provide services to its customers anywhere, anytime and any amount of time. i.e., it is ubiquitous so that customer need not weight either in the branch or in an online queue to avail service.

### 15) Usage of Technology:

In an ideal system, the technology is used in such a way that all services of the banking system should be delivered effectively without any defect.

#### 16) Secured Service:

An ideal banking system provides all customers with not only basic knowledge of banking but also on authenticity and security for financial transactions. There will be no malpractice or miss function of any processes.

### d) Output Conditions

### 17) High Demand:

In the ideal banking system, since the quality is 100% and defects are zero, the demand for a variety of services is higher than the supply and the efficiency of the system is always 100%.

### 18) The choice for Alternative:

In the ideal banking system, the customers have a choice of alternative in terms of service providers so that the customer satisfaction will be 100%.

#### 19) Sustainable for a long time:

As per the definition, the ideal banking system will be sustainable for a long time with infinite demand, infinite serving ability, an infinite profit.

Irechukwu (2000), Prasad & Aithal (2015), Laudon & Laudon (2000), the mobile banking system which is ubiquitous i.e., services available to the customers anytime, anywhere, any amount of time irrespective of a number of customers availing the service at a time, using wireless electronic/optical technology made the conventional brick and mortar banking system as ubiquitous banking. The automated banking services using computer technology and information technology support to make banking services ubiquitous. Due to the massive growth of banking technologies with the aid of 5G mobile technology, Aithal (2016), Varambally & Aithal (2009), mobile banking services becoming more authenticated and secured. This has increased the confidence of the common man to use such services in a day today's life. Most of the characteristics of the ideal banking system are comparable with the characteristics of the ubiquitous mobile banking system. Thus, the ubiquitous nature of the mobile banking system made it as the ideal banking system. Yang et al., (2009), Yu et al., (2004), the advents in wireless technology became a boon to provide ideal banking system to mankind. Even though we could not realize ideal engine, ideal technology, an ideal education system in practice, we have almost reached the goal of the banking system by elevating ubiquitous mobile banking system close to the ideal banking system.

### 4. Conclusion

Banks are formulating various strategies in order to attract more deposits and lend it to genuine customers to get a better return and hence make more profit. Based on such objective of a general banking system, the ideal concept of a banking system is developed. The ideal bank is a system with ideal banking characters. In this paper, a model of an ideal banking system is proposed by considering the ideal characteristics expected under input conditions, output conditions, system requirements, and environmental conditions. The factors affecting these characteristics are identified using a qualitative data collection instrument namely focus group method. Finally, some of the possible technology supported models which support the concept of Ideal banking are identified and analyzed. Based on our

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analysis and discussion on comparing the features, ideal banking characteristics, and mobile banking characteristics are almost matching and hence it can be concluded that ubiquitous banking system based on mobile banking technology is a perfect model to realize ideal banking system.

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The author declared that he has no competing interest. The study was financed by Shama Rao Foundation & Srinivas Group of Colleges.

### Statement of authorship

The author has a responsibility for the conception and design of the study. The author has approved the final article.

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#### References

Acharya, S., & Aithal, P. S. (2016). Concepts of Ideal Electric Energy System for production, distribution and utilization.

Aithal, P. S. (2015). Biometric Authenticated Security Solution to Online Financial Transactions.

Aithal, P. S. (2015). Concept of Ideal Business & Its Realization Using E-Business Model.

Aithal, P. S. (2015). Factors Affecting Banker's Perspective on Mobile Banking.

Aithal, P. S. (2015). Mobile Business as an Optimum Model for Ideal Business.

Aithal, P. S. (2015). Recommendations on Policy & Regulatory Guidelines For Mobile Banking in India.

Aithal, P. S. (2016). A Review on Opportunities and Challenges for Mobile Business Activities in India.

Aithal, P. S. (2016). A Review on various E-business and M-business models & Research Opportunities.

Aithal, P. S. (2016). Realization of Ideal Banking Concept using Ubiquitous Banking.

Aithal, P. S. (2016). Review on Various Ideal System Models Used to Improve the Characteristics of Practical Systems.

Aithal, P. S. (2016). The concept of Ideal Strategy and its realization using White Ocean Mixed Strategy.

Aithal, P. S., & Aithal, S. (2014). Ideal education system and its realization through online education model using mobile devices. In *Proceedings of IISRO Multi Conference* (pp. 140-146).

Aithal, P. S., & Aithal, S. (2015). A Review on Anticipated Breakthrough Technologies of 21st Century.

Aithal, P. S., & Aithal, S. (2015). An Innovative Education Model to realize Ideal Education System.

Aithal, P. S., & Aithal, S. (2015). Ideal Technology Concept & its Realization Opportunity using Nanotechnology.

Aithal, P. S., & Pai, T. (2016). Concept of Ideal Software and its Realization Scenarios.

Aithal, P. S., & Varambally, K. V. M. (2006). Security Issues in Online Financial Transactions with Special Reference to Banking Industry. *Quality in Service Sector and Managerial Challenges—Allied Publisher Pvt. Ltd*, 103-114.

Aithal, P. S., & Varambally, K. V. M. (2015). Customer Perspective on Online Mobile Banking in India-An Empirical Study. Choi, N., & Majumdar, S. (2014). Social entrepreneurship as an essentially contested concept: Opening a new avenue for systematic future research. *Journal of business venturing*, 29(3), 363-376.

Floh, A., & Treiblmaier, H. (2006). What keeps the e-banking customer loyal? A multigroup analysis of the moderating role of consumer characteristics on e-loyalty in the financial service industry.

Irechukwu, G. (2000). Enhancing the performance of banking operations through appropriate information technology. *Information technology in Nigerian banking industry, spectrum books, Ibadan*, 63-78.

Krishna Prasad, K., & Aithal, P. S. (2015). Massive Growth of Banking Technology with the Aid of 5G Technologies.

Laudon, K. C., & Laudon, J. P. (2000). Management Information Systems: Organization and Technology in the Network. Prentice Hall.

Mols, N. P. (2001). Organizing for the effective introduction of new distribution channels in retail banking. *European Journal of Marketing*, 35(5/6), 661-686.

Mols, N. P., Nikolaj D. Bukh, P., & Flohr Nielsen, J. (1999). Distribution channel strategies in Danish retail banking. *International Journal of Retail & Distribution Management*, 27(1), 37-47.

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *The journal of marketing*, 20-38.

Morrison, P. D., & Roberts, J. H. (1998). Matching electronic distribution channels to product characteristics: the role of congruence in consideration set formation. *Journal of Business Research*, 41(3), 223-229.

Oliveira, T., Faria, M., Thomas, M. A., & Popovič, A. (2014). Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM. *International Journal of Information Management*, 34(5), 689-703.

Rogers, E. M. (1995). The Diffusion of Innovation (The Free Press, New York).

Sreelatha, T., & Sekhar, C. (2012). Role of technology in Indian banking sector. *International Journal of Management and Business Studies*, 2, 36-40.

Varambally, K. V. M., & Aithal, P. S. (2009). Mobile Business Technology and Business Proliferation of Banks–A futuristic Approach.

Woods, E. J., Perry, B. C., Hockema, J. J., Larson, L., Zhou, D., & Goebel, W. S. (2009). Optimized cryopreservation method for human dental pulp-derived stem cells and their tissues of origin for banking and clinical use. *Cryobiology*, 59(2), 150-157.

Wu, H. Y., Tzeng, G. H., & Chen, Y. H. (2009). A fuzzy MCDM approach for evaluating banking performance based on Balanced Scorecard. *Expert Systems with Applications*, 36(6), 10135-10147.

Yang, H., Wei, Z., & Chengzhi, L. (2009). Optimal design and techno-economic analysis of a hybrid solar–wind power generation system. *Applied Energy*, 86(2), 163-169.

Yu, G. J., Jung, Y. S., Choi, J. Y., & Kim, G. S. (2004). A novel two-mode MPPT control algorithm based on comparative study of existing algorithms. *Solar Energy*, 76(4), 455-463.

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Prof. Dr. P. S. Aithal is belonging to Udupi, India, born on 04/04/1966. He has M.Sc. in Physics, M.Sc. in E-Business, M.Tech. in Information Technology, Ph.D. in Physics, and Ph.D. in Management. His major fields of study are the characterization of nonlinear optical materials, optical solitons, e-commerce, and mobile business. He has two years postdoctoral research experience at Physical Research Laboratory, Ahmedabad, India and one-year postdoctoral research experience at CREOL, University of Central Florida, USA. Currently, he is working as PRINCIPAL at Srinivas Institute of Management Studies, Mangalore, India. He has published about 140 research papers in peer-reviewed journals.