Building a model for rating the level of digital transformation in management accounting of enterprises

BY

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Abstract

This article presents a model that is not only academically rigorous but also highly practical, aiming to assess the level of digital transformation in management accounting in Vietnamese enterprises. The research data, collected, analyzed, and synthesized from overview documents and in-depth interviews with 05 accountants of Vietnamese enterprises and 05 lecturers and researchers, forms the basis of this model. The model, which categorizes digital transformation into 03 levels of accounting (basic, enhanced, and advanced digital transformation) and 06 aspects (Customer, Digital Strategy, Technology, Operation, Culture, Data), provides a practical tool for business evaluation levels and suggests avenues for further in-depth research on digital transformation in management accounting.

Keywords- Digital transformation, Digital transformation level, Enterprise, Management accounting.

INTRODUCTION

The rapid transformation of technology has had a profound impact on all sectors, particularly the economy. Digital transformation, the application of digital technologies to businesses' operating fields, is not just a buzzword but a practical approach that can change operating and business models, leading to higher efficiency and newer values. The digitization of business activities has revolutionized management practices (McQuade, 2006; Yang et al., 2014). With the application of the Internet of Things (IoT), Artificial Intelligence (AI), and Big Data, Blockchain is becoming increasingly relevant to all levels of the business and all functions, including indicators, global accounting, and financial data (Chen et al., 2015).

Digital transformation enhances the usefulness of management accounting information. Integrating reporting systems, Charts, Technical Indicators, Trend Analysis, Research, Cloud Computing, and Mobile Applications has created intelligent systems with analytical and predictive roles (Hiller & Russel, 2013), enabling reporting managers to analyze information and make business decisions simultaneously. The application of modern technology in work helps accountants be more flexible; departments in the company easily connect to help capture information quickly and proactively solve remote work at all times.

Assessing the level of digital transformation in organizations, especially businesses in the digital transformation phase, is essential and helpful in serving as a basis to orient and navigate the digital transformation process of the unit. In Vietnam, the Ministry of Information and Communications has issued a set of indicators to assess the level of digital transformation of enterprises according to Decision No. 1970/QD-BTTTT "Regulations on indicators for assessing the level of digital transformation of enterprises" dated 13/12/2021 with 06 pillars: (1) Digital experience for customers, (2) Strategy, (3) Digital infrastructure and technology, (4) Operation, (5) Digital transformation of corporate culture and (6) Data and information assets. However, the level of digital transformation in fields, including management accounting, has yet to be written with guidance or suggestions from previous research results. Therefore, this article aims to build a model for assessing the level of digital transformation in management accounting to serve as a basis for the evaluation levels of businesses and suggest in-depth research on digital transformation in management accounting.

LITERATURE REVIEW

Model for measuring the level of digital transformation

Digital transformation assessment activities at units need to be conducted periodically and applied to all activities and departments at the unit. According to the advice of Deloitte & TMForum, the current level of digital maturity is ranked according to 05 levels from 01 – 05: (1) Initiating, (2) Emerging, (3) Performing, (4) Advancing, and (5) Leading, in which, level 05 is the highest, then, the organization is the leading unit in the industry, digital transformation is widely applied throughout the organization.
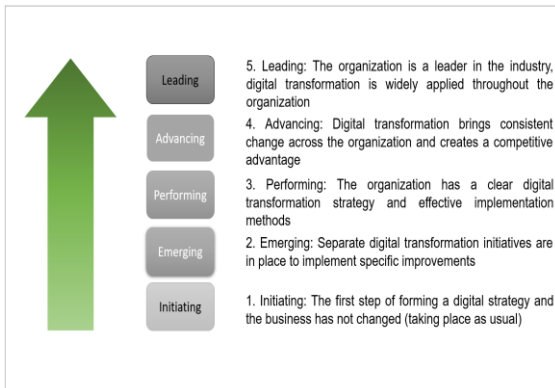

Figure 1. 05 Levels of digital maturity assessment
(Source: Viettel Solution, 2022)

Measure the level of digital transformation by each aspect.

Overall digital transformation measurement aspects include: (1) Customer - Evaluating the delivery of an interactive experience in which customers view the organization as their digital partner; (2) Strategy - Assesses the extent to which the organization plans to increase its competitive advantage through a comprehensive digital strategy; (3) Technology – Assesses the organization's technological capabilities to establish, sustain and transform capabilities to support business objectives; (4) Operational-Evaluation of the organization's performance on day-to-day operations that support the implementation of the digital strategy; (5) Culture – Assesses the ability to create an environment where everyone is willing and able to create business value at the entity; (6) Data and digital information assets.
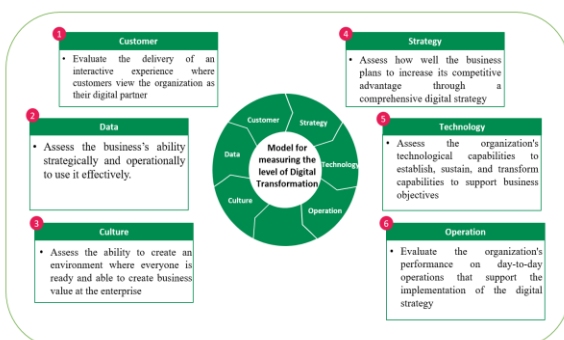

Figure 2. Model for measuring the level of digital transformation
(Source: FPT Digital, 2022)

Customer Aspect

Criteria for measuring customers in real estate include:

External customers: The organization brings a good product and service experience.

Customer Experience Management: An internal organizational and governance system to deliver customer experience.

Customer Insights: The organization effectively uses data to generate customer insights.

Customer trust: The experience provided aligns with the promise of the business brand.

Digital Strategy Aspect Group

General measurement criteria for the strategy of digital transformation include:

Marketing & Brand Management: Consistent brand messaging is developed and maintained across all channels
Ecosystem management: Businesses can apply the ecosystem to create business value

Financial sponsorship: Financial sponsorship is applied to support the Digital Transformation strategy

Market Insights: Market information is collected to inform strategy

Portfolio management: Businesses maintain a balanced portfolio of digital products and services

Strategic management: Enterprises develop and adopt a clear and complete Digital Transformation strategy

Technology Aspect Group

Technology management: Enterprises well manage the use of technology in research, development, and production of goods and services

Apps: Some apps describe the behavior of apps and their integration with technology platforms and services.
Security: Enterprises plan and proactively address threats, vulnerabilities, and security compliance requirements
Apps & Platforms: Technology platforms and tools put in place to effectively develop and manage applications and processes

Connectivity & Computing: Businesses have the connectivity and computing capabilities needed to support digital business operations
- Technology architecture: A comprehensive digital technology architecture operates in the unit.

Operational Aspects Group

Operation management: Effective enterprise management
Service Design & Innovation: Enterprises can effectively design and develop innovative services that deliver business value

Service Deployment Transformation: Enterprises can quickly, flexibly, and efficiently deliver, deploy, and stop services

- Service activities: Enterprises operating services in production and business, ensuring availability, quality, and ability to meet changes in demand

Digital Culture Aspect Group

Culture: Digital culture is promoted and universalized throughout the unit.

Organizational values: Organizational values are established to drive the employee experience

Talent Management: Businesses have the capacity, knowledge, and tools to create and develop an effective workforce

Support from the workplace: The organization's work environment, tools, and experience support productivity and innovation.

Digital Information Asset and Data Aspect Group

Data governance: Enterprises have an effective data management system.

Data processing techniques: Enterprises have adequate systems and processes to collect, transfer, store, and process data

Realizing value from data: Businesses can realize business value from data assets.

RESEARCH METHOD

The research process is as follows:

Step 1: Collect secondary data from reading a research overview of digital transformation in accounting in general and management accounting in particular, thereby identifying the research problem as a model for assessing the level of digital transformation in management accounting. Summarize relevant data collected to build the intended research model.

Step 2: Qualitative research through interviewing 05 experts who are corporate accountants (Misa et al. Company, Thanh Nam Group Joint Stock Company, International Telecommunications Infrastructure Development Investment Joint Stock Company, Champa Group Joint Stock Company, AFT Co., Ltd.) and 05 lecturers, researcher of the Faculty of Accounting, University of Labor and Social Affairs. The interview subjects were selected based on convenience, being friends and partners of the research team. The interview period is from October 2, 2023, to October 15, 2023. Consulting experts through in-depth interviews, the authors use interview outlines to ensure the consistency of the interviews and to avoid missing the content of the interview. The interview outline includes aspects of the digital transformation model, including 06 elements of FPT Digital Company associated with management accounting.

Step 3: Synthesize and analyze interview data to propose a model to assess the level of digital transformation in management accounting.

RESEARCH RESULTS

Digital transformation level in the field of management accounting

Applied in the field of management accounting, measuring the general level of digital transformation is used according to the suggestion of Misa Company and the unanimous opinion of the interviewees; accordingly, the evaluation model is based on levels 1-3, specifically:

Level 1: Basic digital transformation

- Ready for essential digital transformation, all internal operations using digital solutions, and internal transactions on the digital system.
- Digital transformation of the accounting work process includes E-invoices, digital signatures, electronic payment, and electronic social insurance tax declaration and payment.
- Digital transformation of businesses' operations: Manage work and join the accounting connection platform.

Level 2: Enhanced digital transformation

- Enhanced digital transformation growth, internal transaction automation, data centralization, and connection with transaction systems of partners, customers, and self-service partners.
- Digital transformation of the accounting work process: Automating data entry, documents, invoices, banking connection, electronics, automatic checking, invoice correctness, and exchanging information and documents with customers via mobile devices.
- Digital transformation of businesses' operations: Centralized management of documents and customer data. Connect with the information base system of taxes and state agencies.

Level 3: Advanced digital transformation

- Breakthrough, comprehensive digital transformation, automation of transactions with customers and partners, exploitation of internal and external data, analysis and prediction of market capacity and demand.
- Data analysis
- Application of analytical and forecasting systems based on Big Data and AI
- Applying AI to automate accounting
- Chatbot application consults and supports customers.

Measure digital transformation by each aspect in the field of management accounting.

Based on the unanimous opinions of the interviewees, the authors proposed a model for assessing the level of digital transformation in enterprise management accounting, shown in Figure 3.

Customer Aspect Group:

Applied in international intelligence, to evaluate digital customer experience, it is necessary to consider the criteria:

- The frequency of business interaction with customers in the digital environment;
- The frequency of professional interaction with state agencies in the digital environment;
- Frequency of use of online banking services by enterprises;
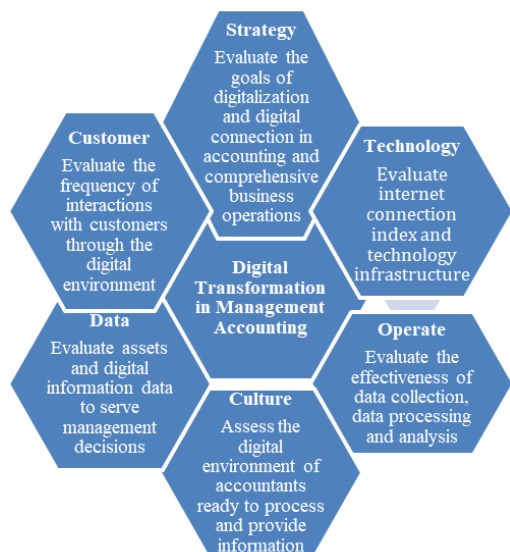- The extent to which businesses shop for goods online.

Figure 3. Proposing a model for assessing the level of digital transformation in business management accounting

Digital Strategy Aspect Group:

Applied in the EIA, to evaluate the real estate strategy, it is necessary to consider the criteria:

- Enterprises aim to digitize everything possible in accounting-related work;
- Enterprises aim to exchange information digitally;
- Enterprises want to create stronger connections between business and accounting processes using digital technology.

Technology Aspect Group

Applied in the EIA, to evaluate real estate technology, it is necessary to consider the following criteria: (1) Internet connectivity index and (2) Information technology infrastructure (basic and advanced).

- Internet connectivity index: measures the level of internet connection for accounting work
- Basic information technology infrastructure includes solutions for electronic record keeping, E-invoices, Information sharing solutions, Filing tax returns, insurance, and accounting reports.
- Advanced information technology infrastructure includes Cloud computing applications, Applications on blockchain technology platforms

(Blockchain), Artificial Intelligence (AI), and Big Data collection (Big Data).

Operational Aspects Group:

Applied in the EIA, to evaluate the operation of real estate, it is necessary to consider the criteria: the content of collecting, processing, and analyzing digital accounting data.

- Digital transformation in data collection

Data plays a vital role in digital transformation. It is both a source of input information and a basis for accountants to process and analyze to provide managers with accurate reports and plans. The first tools to help digital transformation in data collection must be accounting software and Big Data.

One way to digitally transform data collection is to use online accounting software and online systems, applying cloud computing technology. Now, accountants can input business information and data into the software, and through analysis, the software can reveal more aspects of the data set. Cloud computing technology can also link banks, suppliers, accountants, and customers with the data set and input information that businesses have provided.

Data collected through e-invoices, digital signatures, electronic payments, and electronic social insurance tax declaration and payment must be considered when evaluating real estate.

- Digital transformation in data processing and analysis

After collecting data, the accountant enters the data, transactions, and book documents for the software to process. With a pre-established mechanism and process, accounting software will handle raw data. On this basis, develop accounting reports. In addition to online accounting software, the digital transformation in data analysis also uses ERP systems, which are systems to support business administration. The system can use the data provided by accountants to assist in automating reports.

Artificial intelligence (AI) technology is used in data processing and analysis. AI is the initial data analysis tool or method for accountants to achieve the desired results. AI can analyze accounting data to detect fraud and errors in the accounting process. AI can assist in sorting out related taxes and regulations, helping to generate accurate tax reports and regulatory compliance. AI can predict and analyze financial and accounting data to create forecasting scenarios and financial accounting planning for the future. Machine learning algorithms and neural networks build models that predict and analyze financial accounting risks.

Information processing and big data (BigData) help accountants gather and process vast amounts of data quickly and accurately, thereby helping to control and manage departments in the business apparatus more uniformly and easily.

Evaluate through the automation of data entry, documents, invoices, banking connections, electronics, automatic

checking, invoice correctness, information exchange, and documents with customers via mobile devices.

Digital Culture Aspect Group

Applied in EIA, to evaluate the real estate culture, it is necessary to consider the general digital culture of the business, from work management to detailed implementation in each department and administrative part. Therefore, it is essential to assess the level of automation of transactions with customers and partners, exploitation of internal and external data, analysis and prediction of enterprises' capacity and market needs, and readiness to participate in digitalization in accountants' work.

Data and digital information assets for decision-making Group

Applying IA to evaluate digital information data and assets for managers' decision-making requires considering the process of providing digital information and digital data using modern technologies and world trends to make reports for managers' decision-making. Besides the essential technology elements for accounting, the most influential advanced technologies are artificial intelligence (AI), big data, and blockchain technology.

AI is becoming an increasingly important tool for businesses to make informed decisions. In accounting, technology provides information and data for accountants to prepare reports and plans for managers to make faster and more accurate business decisions. AI in management accounting, with the ability to analyze vast amounts of data with entries, contracts, and reports ... is elevating rudimentary data inputs and providing different perspectives for management, thereby creating more insights and gradually changing how businesses operate. Enable businesses to make more informed decisions, reduce risk, and increase efficiency.

Big Data plays a vital role in data analysis and forecasting and is considered an essential analytical tool for finding answers to questions: reduce costs, reduce time, and make intelligent decisions. When the study of significant data sources is maximally supported, it not only allows the organization to complete several tasks such as identifying the causes of failures, analyzing the market, understanding customer behavior, calculating the risks encountered, detecting fraudulent behavior before it affects the organization ... but also helps accountants check large transaction volumes as well as easily detect errors on current technology equipment, thereby creating motivation for units to improve the quality of technology equipment for accounting information systems.

Blockchain only needs one entry to provide information to all parties without worrying about authenticity. Accounting records will not be able to be repaired or changed once saved to the blockchain, even if requested by the owner of the accounting system. On the Blockchain platform, all daily transactions are recorded and authenticated, thus helping the process of providing information for managers to make decisions more accurately and ensure more security.

CONCLUSION

Accounting is a field in a business environment strongly affected by digital transformation. Information technology has changed how information is used for managers and how accountants provide information. Digital transformation is integral to the accounting process, and data security has become very important for businesses. The study collected information from overview documents and in-depth interviews with Vietnamese business accountants lecturers and researchers to propose a model for assessing the level of general digital transformation according to 03 levels of accounting (essential digital transformation, enhance and enhance) and 06 aspects (Customer, Digital Strategy, Technology, Operations, Culture, Data). Each element has proposed criteria to measure enterprises' digital transformation level in management accounting. This result is the basis for business evaluation levels and suggests in-depth research on digital transformation in management accounting.

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