



# Future Digital Converter Solutions in Ham Thuan Bac District, Binh Thuan Province

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**Abstract:** In the context of globalization and sustainable development, digital transformation is becoming more and more popular in not only developed countries but also in developing regions, countries and localities. Therefore, the People's Committee of Ham Thuan Bac district, Binh Thuan province pointed out that the implementation of digital transformation is very necessary and an inevitable trend in the recent integration and development process.

**Key words:** digital converter, solution, Ham Thuan Bac

## I. INTRODUCTION

The implementation of digital transformation is very necessary with the Ham Thuan Bac District People's Committee as an inevitable trend in the recent integration and development process. Digital transformation is to support information technology application plans that have been implemented and planned to deploy follow the general trend of the industrial revolution 4.0. By providing the services of utilities for people and businesses, it contributes to accelerating urbanization for the district.

## II. FUTURE DIGITAL CONVERTER SOLUTIONS

### 2.1. General overview of digital transformation

The digital economy is based on the level of economic development of the digital platform. The high level of productivity development is directly a powerful parallel development between digital technologies (typically the Internet of things). On the other hand, the digital economy has brought huge and rapid changes to all aspects of the economy and human life. Implement national digital transformation in terms of national governance, national management, production and operation, social organization, and national resource management. Implement digital transformation in companies such as corporate governance, human resources, and production lines.

A smart city is an urban area in which information and communication technology (ICT) is applied to all activities, bringing high efficiency in administrative management, socio-economic development, and quality improvement community and ensuring sustainable development. Building smart cities are the trend of the times, the objective development law of information technology application in urban construction and management. In association with digital transformation to build a smart city, it is necessary to ensure inheritance and avoid wasting resources on information and communication technology systems and infrastructure. Digital transformation associated with smart city construction is a construction that needs the contribution and participation of all people, businesses, and organizations of the district.

Digital transformation is the application of innovation and rapidity of technical technology, especially information and communication technology devices, to solve problems. Describe strong and comprehensive innovations in the way the organization operates in all aspects such as supply, manufacturing, collaboration, customer relationships, or even creating new ways of doing business completely new ways of working.

Digital transformation is the process of changing from the traditional model to digital technology by applying new technologies such as big data (Big Data), Internet of Things (IoT), cloud computing (Cloud) changing erupting methods, leadership, working processes, culture, and more accurately thanks to a timely and transparent reporting system. Thereby, the operational efficiency and competitiveness of organizations and enterprises are improved. Digital transformation affects not only organizations or businesses but also other target groups around such as customers, partners, human resources, distribution channels.

## **2.2. Digital transformation status in Ham Thuan Bac district, Binh Thuan province.**

Ham Thuan Bac is one of the mountainous districts of Binh Thuan province, located to the northeast of Phan Thiet city, with a natural area of 1283.93 km<sup>2</sup>, the population grows to more than 192 thousand people, of which female accounts for 52.3%. Administratively, the district has 17 communes and townships, including 2 towns, 11 communes in the plains, and 4 communes in the high mountains. Regarding tourism, Ham Thuan Bac has many beautiful scenes, promising to open many types of eco-tourism and resorts such as Ham Thuan Lake - Da Mi, Song Quao Lake, Da Mi waterfall.

### ***Advantages***

Ham Thuan Bac district has provided and put into use 60 online public services at level 3 and 67 online public services at level 4 at the provincial online public service portal. The electronic Single Window system at the district level implements a 3-level linkage (commune - district - province). Shared applications in state agencies in Ham Thuan Bac district, Binh Thuan province have synchronously deployed a number of internal applications to serve the activities of state agencies. System of document management and administration to units throughout the district, including 12/12 professional agencies under the district People's Committee, 129 units under departmental level and equivalent, 6/6 non-business units, 17/17 commune-level units. Website of Ham Thuan Bac district at the following address <http://hamthuanbac.binhthuan.gov.vn>. Public entities will utilize and share a common infrastructure platform from computing infrastructure, databases, labor data analysis tools to interaction channels with people and between units in order to overcome current limitations in the application of information technology in various fields. Agencies work closely with each other to take advantage of, optimize resources, use tools and applications to connect throughout.

Digital transformation will lead to effective planning management based on fully exploited data and information sources, supporting planning to help develop sustainable coastal cities in many areas face. Systems for collecting and analyzing data on the environment in service of improving the capacity to forecast prevent and respond to climate change; at the same time have friendly behavior policies to protect the environment. The government of Ham Thuan Bac district uses information and communication technology to establish connection channels suitable for each population and business. Thereby creating the most favorable conditions for people to use online public services at level 3 and level 4 of the district. Open data will be provided to people to actively look up and perform their supervisory role to provide opposite information to localities, especially in current hot areas such as security and order self, environment, health, and education. Besides, these information boards are also a tool to support the government in propagating and raising public awareness about the living environment.

Information and communication technology applications in the management of solid waste collection facilities along with predictive analytics tools will help optimize solid waste collection system operations. That is an optimal route at off-peak hours, without going through important administrative areas, optimizing vehicle loads, not missing garbage collection points, paying attention to the peculiarities of hazardous waste transported in urban areas. Thereby, it ensures environmental safety for people. Traffic police have tools to detect and handle violations of traffic order and safety automatically and effectively. People provide with full

information about security and order in the district. The information posted on the internet is monitored and processed when necessary. Incidents, accidents, and disasters are supported to be handled quickly and accurately. Tourism has an official portal and mobile application to serve visitors, connecting over 100% of businesses in the area to the website. Equipped with public wifi at tourist spots, crowded places, and bus stations. Accurately manage tourist information number of visitors, visitor classification (international, domestic), length of stay, the purpose of stay, and average financial travel spending. Tourism industry data is centrally managed; predictive analysis is processed quickly and accurately.

### ***Disadvantages***

Firstly, in general, the computer infrastructure at provincial and district agencies has been relatively fully invested, basically meeting the operational and professional needs of officials and civil servants. However, many computers have been equipped with a long, slow processing speed; Secondly, online public services at level 3 and level 4 have not yet promoted investment efficiency, and the percentage of online submissions is still very limited; Thirdly, information technology has been wisely invested and applied in all district and commune agencies, achieving many positive results, contributing to enhancing the operational efficiency of agencies, and improving the quality of service to the people; Fourthly, it has not yet met the requirements for communication and connection between applications, has not yet deployed interconnection axes between application systems as a foundation for standardization, process automation, and simple operation, and simplified administrative procedures for people; Fifthly, the requirements for data sharing and sharing have not been well met; the data has not been standardized and has not been widely shared among units, serving as a basis for professional communication and simplifying administrative procedures for people; Seventhly, there has been no synchronization in architecture, technology, and standards for application systems, data, and underlying infrastructure due to historical factors. Finally, the number of cadres and civil servants in the province is quite large, but the level of information technology application, the ability to receive, use and effectively exploit the software is still limited. Therefore, the application of information technology in handling administrative procedures in recent years has not created a synchronous and clear change in the whole district.

### ***Reasons for the above limitations***

Firstly, most of the information and communication technology service providers are small and medium-sized, with low competitiveness, slow consumption of products, low productivity, and quality. The ineffective investment attraction leading a very difficult for outsourcing to affect investment in technical infrastructure district information technology; Secondly, Ham Thuan Bac district, Binh Thuan province, has a low readiness index for the development and application of Information and Communication Technology (ICT Index). Financial and human resources to deploy information technology applications are limited, small and according to short-term plans; Thirdly, the number of integrated services is still low, many applications are provided by many different units, not connecting, leading to asynchronous system; Fourthly, the efficiency of using information technology utilities by people and businesses is still low. For example, many public services posted on the Provincial Online Public Service Portal have been provided at level 3 and level 4, but the rate of people using them is very low. Due to the limited access to and use of modern technologies in the social life of the people, the outdated thought of wanting to meet the people's case handlers directly still exists in the subconscious; Fifthly, in terms of finance, this is the difficulty faced by units in the district in implementing information technology applications. Although Ham Thuan Bac district has had an interest in developing information technology applications, the financial resources for implementing information technology applications for units are still small and according to short plans term; Finally, in terms of resources to operate digital transformation, it requires a large amount of specialized information technology human resources in both quantity and quality. This will be difficult for most units in the implementation, training, technology transfer and system operation.

### **Some solutions for digital transformation in the future**

Firstly, Ham Thuan Bac district closely follows the development orientation of Binh Thuan province, suitable to the specific conditions of the district. At the same time, it is necessary to identify long-term development strategies, leadership vision, from which to build a digital transformation roadmap in many stages in accordance with the needs, conditions, and potentials of the district; Secondly, Ham Thuan Bac district needs to focus on the people and understand the needs of each segment of people and businesses. Clearly identify the needs of organizations, individuals, and visitors to find ways to solve the difficulties they encounter during the process of approaching and dealing with the authorities. In addition, it is necessary to strengthen the guidance to propagate people to use online public services at level 3 and level 4; Thirdly, Ham Thuan Bac district clearly identifies solutions that can be deployed immediately to bring practical benefits to the people soon. Fourthly, Ham Thuan Bac district needs digital transformation on the basis of modern, synchronous technology, with high connectivity, safety, and security; Fifthly, Ham Thuan Bac district needs to ensure the synchronization between technological and non-technological solutions, such as the legal system, supporting policies, and encouraging large enterprises to participate. Sixthly, Ham Thuan Bac district needs to encourage digital transformation with all forms of science and technology cooperation with domestic and foreign organizations and companies in technology transfer; Finally, Ham Thuan Bac district needs to have a plan for regular training and retraining for cadres and civil servants in the whole district on knowledge and skills of information technology application, information safety, and security.

### **Expected results of digital transformation in the future**

Firstly, state administrative agencies from the district to the commune level will synchronously deploy the public service portal and the electronic one-stop information system to serve the reception and settlement of administrative procedures according to the "mechanism of law one door"; Secondly, along with that, connect single sign-on to systems and modules of the National Public Service Portal such as the Online Payment Platform; Electronic identification platform; National database on administrative procedures; The information system receives and responds to complaints and suggestions from people and businesses; Thirdly, enterprises promote the application of information technology to serve production and business activities such as using software to set up production processes, manage customers, manage raw materials, manage accounting and finance and apply software, widespread use of electronic payment method; Fourthly, the district will gradually implement awareness transformation and mindset formation for the contingent of cadres and civil servants on the development and application of digital technology in state management; Fifthly, the district will determine the development of a digital platform that accelerates the digital transformation process, promotes the digital platform; Sixthly, the district will promote the application of information technology in teaching and learning, in online teacher training and retraining, which has contributed to improving the effectiveness and efficiency of management and saving a lot of costs. Simultaneously, deploying a centralized data management system (Big Data) of the Education sector across the district; Seventhly, use smart systems to receive and manage continuous automatic wastewater monitoring data for enterprises in the district; Finally, the district will set up the District Smart Operations Center; prioritize the implementation of digital transformation in a number of fields such as health, education and training, finance - banking, agriculture, transportation and logistics, energy, natural resources - environment. At the same time, the district will continue to develop digital infrastructure, digital platforms, create institutions and ensure network security to serve digital transformation safely.

## **III. CONCLUSION**

The implementation of digital transformation is a complex and long-term process, requiring the participation of all sectors of society and professional forces, and the consensus and determination of the Ham Thuan Bac District Party Committee and the people. The application of new technologies in society is becoming more and more extensive, in line with the overall development direction of the law of supply and

demand, and in line with the inevitable trend of technological development. The results of the research will help residents and tourists use advanced modern technologies to obtain quality services in the fields of education, healthcare and transportation. With the above resources and infrastructure, Ham Thuan Bac District focuses on implementing comprehensive interdisciplinary solutions that go beyond forecasting and big data analysis capabilities.

Ham Thuan Bac district implements digital transformation on modern infrastructure on the cloud computing platforms, combined with applications and information systems. At the same time, the district combined with a strong database and human resources will be able to manage and operate the administrative apparatus in the best way. This helps the district successfully implement the construction of a smart and national-worthy city. Digital transformation solutions with artificial intelligence solutions in processing, big data analysis, trend forecasting on the cloud computing platforms, management, administration, and decision making will be towards the model. The smart governance model of Ham Thuan Bac district, Binh Thuan province is worthy in the future.

#### IV. REFERENCES

1. Directive No. 16/CT-TTg dated May 4, 2017 of the Prime Minister on strengthening the capacity to access the 4th Industrial Revolution.
2. Resolution No. 04-NQ/TW dated October 30, 2016 of the Politburo clearly stated: "Soon to start building a number of special administrative-economic zones; prioritize the development of a number of smart cities".
3. Resolution No. 36<sup>a</sup>/NQ-CP dated October 14, 2015 of the Government on e-Government defining the goal of "Promoting the development of e-Government, improving the quality and operational efficiency of institutions government agencies, serving people and businesses better" has oriented the government towards the people, focusing on the people.