E-planning and Its Potential Development in Vietnam's Urban Planning

Le Dinh Phuoc and Nguyen Giang Son

Abstract Today, terms including e-service, e-business, e-government and e-governance have become ubiquitous. Following this trend, electronic planning or e-planning has gradually gained its traction and well-developed in many developed countries. In Vietnam, e-planning has not been conceptually brought into existence yet. However, with the increasing commitment of the Vietnamese government to e-government transformation and incremental implementation of Information and Communication Technologies (ICTs) in the urban planning industry, switching the traditional mode in urban planning to an electronic mode is inevitable. Therefore, this paper aims to offer an indicative account of e-planning potential development in Vietnam's urban planning industry through critical analysis of the conducive environment that e-government and ICTs implementation have currently provided to a foreseen e-planning transition. Collectively, the paper elicits preliminary recommendations after providing a discussion on the potential benefits and pitfalls that e-planning mode can bring to urban planning in Vietnam.

Keywords E-planning · E-government · Smart development · Urban planning · Public participation · Open data

1 Introduction

E-planning definitions vary from scholars to scholars. Despite this, universally e-planning can be described in some key features. Firstly, it results from the shift from a traditional paper-based system and face-to-face communication to a system, which is supported mainly by digital information and communication technologies. Secondly, e-planning is constituted and integrated with a wide range of digital technologies including GIS, computer-aided design, 3D simulation, database management system, planning support system, and other technological tools. Finally, yet importantly, e-planning as part of e-government aims to increase and improve access to the planning

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system and make it more transparent and easier for planners, planning officers, and communities involved in the planning matters. The aims of e-government, in this sense, are to speed up and accelerate the work of authorities, officers, and other users such as citizens and enterprises, as well as administrative services [1, 2]. In light of that, e-planning's aims in alignment with e-government, are to offer efficient public services, to reduce costs for these services, and, at the same time, to do that through making the process of decision making more participative, accountable and transparent [3].

Given such dynamics in terminology and purposes, e-planning has been widely employed in many major cities, particularly in the developed world. For example, Helsinki—a popular city of Finland emphasises the importance of developing e-planning to strengthen democracy and civic participation. As such, a variety of ICT-based tools has been created to support community participation in urban planning processes. These tools are also striking features of e-planning in Helsinki, including the CPD forum, CPD site, plans-on-the-map, planning competition tools, tell-it-on-the-map, and other unofficial tools such as neighborhood websites and social media [4]. Developing e-participation in planning is also one of the major goals of the e-planning system in cities of Poland and Germany. E-participation in these two countries is developed to increase transparency (public ability to access all local spatial policies), spatiality (development of ICT-based tools assisting the public to access maps with planning information) and interactivity (public ability to be involved in planning decision via the Internet) [5].

In New South Wales—a populous state of Australia, e-planning has been implemented with economic, environmental, and administrative operational incentives culminated in two dimensions: efficiency and accountability that are meant to cut red tape, save time and money, and speed up the approval process in planning [6, 7]. All of these examples but not an exhaustive list demonstrate that e-planning incremental or comprehensive establishment is beneficial and promising. However, developing and implementing e-planning in different cities, in reality encounter various challenges and difficulties, which are caused by multiple factors ranging from political and socio-economic factors to cultural and resource availability ones. Therefore, it is essential to critically examine and outline the current development of e-planning components before deciding to employ this online mode.

This paper hence aims to offer an indicative account of e-planning potential development in Vietnam's urban planning industry, following the government's commitment to e-government. This endeavor is demonstrated through the declaration of the 2019 Resolution No. 52-NQ/TW on framing national policy on active engagement in 4.0 industrial revolution, the 2021 Decision No. 12/QĐ-BKHĐT on accumulating capital and accelerating digital transformation in all industries, and the 2021 Decision No. 1004/QĐ-BXD on the approving the plans for digital transformation of the construction industry in the period of 2020–2030. As such, the paper critically analyses the conducive environment that e-government and ICTs implementation have currently provided to the foreseen e-planning transition. Collectively, the paper elicits preliminary recommendations after providing a discussion on the potential benefits and pitfalls that e-planning mode can bring to urban planning in Vietnam.

2 Urban Planning Foundation in Vietnam

Under the operation of a socialist regime, Vietnam's urban planning system has its intellectual root of centralisation. In Vietnam, urban planning is conceptually viewed as construction urban planning, constituted in sectoral planning, which is a part of the national planning system. The nature of urban planning is still technical, which highly focuses on the organization, distribution of physical space composed of housing, urban social and technical infrastructure, and other physical objects erected to lay the groundwork for other industries. Vietnam's urban planning practices are influenced by a comprehensive-rationalist approach, predominantly rational, hierarchical, and top-down, which dictates a deductive framework serving as a platform for the promulgation of legislation, regulations, and the formulation of planning standards. Collectively, urban planning is classified into master planning, sub-zone planning, and detailed planning monitored and controlled by the Ministry Of Construction. These planning projects are carried out by state agencies or private consultants under the effect of hierarchical legislation and the guidance of multiple regulations. The most relevant legislative and regulating documents are the 2009 Law on urban planning, Decree No. 37/2010/ND-CP on formulating, appraising, approving, and managing urban planning, and Circular No 12/2016/TT-BXD on urban planning preparation.

3 Current Developing Components of E-planning in Vietnam

3.1 E-government Transition

The socio-political context plays a decisive role in the transformation of e-planning approaches and methods, and the success of applying e-planning in each country [4]. The most fundamental characteristic of e-planning is the expansion of e-government applications in urban planning, particularly in formulating, approving, consulting, evaluating, and announcing different types of urban planning projects. Since urban planning methodology, approach, and practice in Vietnam are centralized, featured in the fact that governmental authorities hold a definite power in making planning decisions, the e-government's level of development is the cornerstone of this transition. According to the latest survey results of the United Nations on e-government development policy, Vietnamese e-government development ranked 88th out of 193 countries in 2018. This result is based on the index of e-government development combining calculation of indicators: online services (OSI), communication infrastructure (TII), and human capital index (HCI).

Additionally, the results of the e-government readiness assessment from the World Bank in 2019 show that most of the assessment criteria provide evidence of a fair readiness level (see Table 1). Nevertheless, the report also revealed some weaknesses

Table 1. The readiness of Vietnam e-government

Criteria	The readiness of e-government		
	Under-average	Average	Above-average
Leadership and governance		X	
User-centricity to develop e-government		X	
Changes in working approach	X		
Competency, cultural practices, and skills	X		
Shared infrastructure for performance evaluation	X		
Utilization of data for policy planning and implementation		X	
Cybersecurity, privacy, and resilience		X	

when it comes to boosting the progress of e-government transition, which have direct effects on e-planning in the future. These weaknesses include shortages in investment for shared infrastructure of many industries, the lack of policies in enhancing the interrelationship between these industries, as well as the lack of policies in training and keeping skilled workers who are qualified technically and professionally.

3.2 The Current Application of ICTs and IoT in Urban Planning Practice

According to legislative planning instruments, the sequence of urban planning activities takes place in the following steps (Fig. 1).

Currently, almost all of the stages mentioned above have been utilizing ICTs and the Internet to a certain extent, especially at the first stage of formulating planning tasks and planning projects themselves. During this stage, some assisting apps such as AutoCAD and other digital designing apps are employed by both architect planners and planning officers to carry out planning tasks and complete digital plans to meet requirements set out in multiple bodies of legislation. Later stages' tasks are mainly carried out on the web platform in exchanging and transferring planning documents and further online discussions via mails and planning portals. Regarding

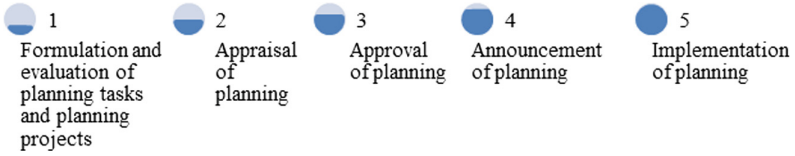

Fig. 1 Urban planning processes in Vietnam

the current ICTs development, the report prepared by the Ministry of Information and Communications in 2019 on the evaluation of the information technology application index of all Ministries in the two areas of internal aspects and online public services shows that most Ministries have indicators which were above average, from 0.5 to over 1.0. The index for the Ministry of Construction was 0.62, which ranked sixth among nineteen Ministries. This index is the aggregate result of the indicators of using email, deploying basic applications, building specialised databases, using open-source software, and using electronic documents. Furthermore, 63 provinces throughout the country already have a planning portal or at least an integrated program within provincial portals. These portals play an important role in giving a platform for local governments to announce new urban planning projects developed within their boundary. Provincial residents at the same time can find information regarding those urban planning projects or conduct online communication with the authorities through emails and chatbox. However, these sites are at the early stage of development, therefore, there are still many limitations. The digital method of interaction is very sketchy and limited.

4 Potential Benefits and Pitfalls E-planning Brings to Vietnam Urban Planning

The aforementioned transition to e-government proved to be slow and the utilization of ICTs and IoT in urban planning is at the early stage of development. However, Vietnam shows a steadily upward increase in this progress, which indicates the inevitability of e-planning shifting in years to come. Therefore, it is essential to make theoretical and empirical assumptions of the benefits as well as potential pitfalls that this switching might bring to Vietnam's urban planning.

4.1 Cutting Red-Tape in Urban Planning Practice

Compared to a traditional paper-based planning system, the implementation of e-planning promotes higher planning procedure efficiency including efficiency in revising, appraising, and approving urban planning projects. Piracha [6] pointed out that e-planning will make planning procedures more effective and efficient, quicker, more accessible, and with minimum costs. Currently, urban planning practices in Vietnam are primarily conducted through physical models developed as cardboard plans, paper, and many relevant materials by architect planners; which have required a significant amount of time, money, labor, and adequate spaces for drawing, organizing, printing, and re-printing. With the help of e-planning in providing a digital system and tools such as online mapping and drawing, overlay mapping, and digitalized data, all of which can be convertible between one another these planning

activities will be carried out faster, more productive, and less costly. As a result, planning practitioners can even submit planning proposals, digitalized plans, and all attachments online and do not have to do it physically, which in reality proves to be time and money-consuming resulting from complicated procedures and cumbersome bureaucracy.

4.2 Greater Participation at Multiple Levels with the Assistance of E-participation Tools

E-planning is an optimal solution in promoting community participation in all phases of planning as in the cases of many developed cities mentioned earlier. Multiple users will feel more convenient and more economical in proving their consultancy to solve problems related to urban planning, due to the reduction of cumbersome administrative procedures, requiring direct interactions between individuals and bureaucrats. The combination of geographic information systems (GIS), World Wide Web (WWW), and community participation using web-based GIS (PPGIS) will usher in a new era of public participation in planning [8, 9]. The most useful features of GIS are the provision and integration of electronic maps, visionary plans, and database systems, which can be managed, manipulated, supplemented, and edited by planning agencies in the same virtual environment. GIS is also an effective tool for planners to present planning proposals with multiple layers of data and maps through the planning portals where the community can read the information on land-use proposals, make comments and express their views anonymously without having face-to-face conversations that are currently being conducted through timely meetings with the community within planned areas in Vietnam. These meetings have been practically proven to be cumbersome and somehow corruption-laden.

4.3 Saving Resources and Optimising Data Storage

Another benefit associated with reducing planning costs and time is that keeping planning-related records in huge volumes of paper is no longer an issue. There has not been any research on the physical resources spent yearly in the urban planning industry. However, the number is not insignificant if considering all printing and reprinting paper plans, processed printing ink and colors as well as assisting resources during urban planning processes. These physical documents and drawings converted to digital data can be stored on the general storage system culminated in a hard drive, electronic data recording device, or online database [10]. This also will give architect planners and planning practitioners flexibility to choose the location or office to work in as long as there is an online network connection available.

4.4 Challenges of Balancing Conflicting Demands

The shortened planning period can generate significant economic profits especially for private investment; however, architect planners and planning officers might overlook the possible negative impacts of new urban planning projects on the community and environment [11]. This issue is significant in the socio-economic context of Vietnam. It is not uncommon for urban planning practitioners in both consulting and approving sides to just focus on the short-term benefits of urban planning projects while ignoring their long-term environmental and cultural consequences. Also, the knowledge about urban planning and interest of the communities in the planned area is often not high and not equal, these communities can be bribed with short-term economic potentials because their quality of life, in the long run, will be decreased by their poor choice.

4.5 Cybersecurity Matters

The next issue is cybersecurity and digital data security systems. Many e-planning researchers have raised the concern on information security risks, even though this information is protected by many different firewall systems [12]. More seriously, this planning data could be modified, making planning information distorted or misled, and causing disturbances in public opinion. Especially when the Vietnamese are new to e-national identification as well as new to e-governance perception. Therefore, building a team of experts on cybersecurity systems for sensitive data is essential when considering converting traditional planning to e-planning.

5 Conclusion and Recommendations

E-planning has changed the landscape of planning systems in many cities around the world. In the era of information technology, communication, and global networking, e-planning will be an unavoidable direction in Vietnam's digital transformation period. This paper provides the basics of e-planning and introduced the well-developed features of e-planning in several cities worldwide accompanied by the analysis of two developing components of e-planning in Vietnam: e-government and ICTs implementation in urban planning. The paper has also critically analyzed the potential benefits as well as pitfalls for the transition to e-planning in Vietnam. As such, the paper here provides some novel recommendations for what should be possibly done from here to shift to the e-planning mode in Vietnam urban planning.

(i) At a macro-level, since e-planning is the next developing stage of e-government policies' promotion and at this stage, it seems that these policies in Vietnam are still in slow progress, albeit some exceptions, our recommendation is to continue the

effort to take all the criteria indicating the readiness of e-government to the highest level. (ii) Since all urban planning projects created, formulated, and monitored by MOC, it is a prioritized responsibility of all staff within the Ministry to play a more active role in increasing e-government readiness initiatives and ICTs implementation criteria, especially in terms of technological infrastructure and facilities, and developing policies to improve and sustain potential planning practitioners who are well-qualified in both urban planning and information technology. (iii) Because e-planning is new in Vietnam, there need to be more conferences, workshops, and training courses that will arm participants including researchers, architect planners, and citizens with theoretical and practical knowledge about how to go on developing this online mode. (iv) Universities providing urban planning courses also have an important role to play in carrying out more research on e-planning in the Vietnam context, identifying possible issues that might arise, and suggesting possible solutions. At the same time, besides academic units on urban planning, more technology-based units on GIS, PPGIS, and community participation mechanisms need to be integrated into the university curriculum. (v) At a micro-level, all the legislative documents about urban planning, which are a handful of obsolete and amended ones, are being converted to digital forms such as .pdf and .doc files. However, there is a lack linkage in terms of their contents and hyperlinks between those documents. Also, these documents are still highly technical and therefore hard to read up. Hence, it is recommended that these legislative documents need to be reviewed and revised to be user-friendlier and more convenient for reference to public viewers. As such, they need to be translated into digital data that is concise and hyperlinked. (vi) Planning portals at different levels from Ministry to provincial and district level need to be continuously developed to higher stages and these portals need to be in harmony with each other in content presentation and operational system. (vii) All urban planning state institutions, private consultants, and other related stakeholders need to work in coordination in adopting e-government policies as well as in preparing technological infrastructure and human resources, getting ready for the transition at all times.

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