Generalizing of the EDIT Model for Non-Tourism Domains

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Integrating design aspects into the developing process of new services is a growing trend. One such attempt has resulted in the experience design, innovation, and touchpoints model, known as the EDIT model designed for the introduction of tourism (re-)innovations (Zach & Krizaj, 2016). The EDIT model employs design thinking and an innovation adoption process approach. In this paper, how the EDIT model can be applied to and adopted for other domains is investigated. The structure and method of this presented research note is the following. The existent EDIT model and its relevance in tourism are presented. Next, all three of the model's axes are analysed for its usage in general business domains in the form of updated EDIT* model. According to the findings, two research & development EDIT* strategies are presented with relevant cases. This paper ends with conclusions, future research, together with identified EDIT*'s weaknesses and strengths.

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Introduction and Method

Integrating design aspects into the developing process of new services is a growing trend. One such attempt has resulted in the experience design, innovation, and touchpoints model, known as the EDIT model, designed for the introduction of tourism (re-)innovations (Zach & Krizaj, 2016). The EDIT model employs design thinking and an innovation adoption process approach. According to the authors, it is flexible enough 'to accommodate different firm types and new service development skills.'

There is a similar existing and growing trend to enhance physical products with services and new business models. They are described as Product-Service-Systems (PSS) in which service design plays a crucial role in their development. The current massive movement to shift certain physical parts of a product to be digital components reinforces and strengthens this change (Porter & Heppelmann, 2015).

In this paper, we investigate how the EDIT model for designing tourism (re-)innovation can be applied to and adopted for other domains, especially the new development of PSS (Zancul et al., 2016). The traditional New Product Development process (NPD) is

also well defined and implemented, but only a few scholars have investigated topics with combined service design elements (Tran & Park, 2014; Ribeiro & Borsato, 2014). Based on current findings in the field of non-technological innovation, (smart) service-dominant logic and service co-creating design, a new version of the existing EDIT model is proposed in this paper. The upgraded EDIT* model will be developed with refined dimension, and the usability of the new model will be explained.

The structure and method of the presented research are as follows. The existent EDIT model and its relevance in tourism are presented in the following chapter. Next, all three of model's axes are analysed for its usage in general business domain in the form of the updated EDIT* model. According to the findings, two research & development EDIT* strategies are presented with relevant cases. The manuscript ends with conclusions, future research, together with EDIT*'s identified weaknesses and strengths.

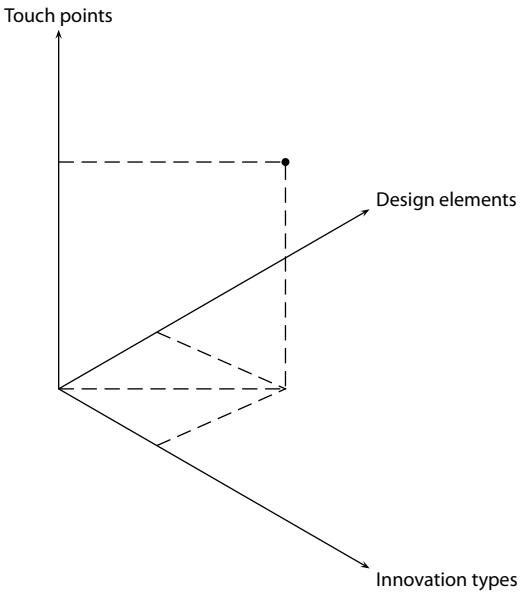

Figure 1 The EDIT Model (adapted from Zach & Krizaj, 2016)

Background of the EDIT Model

In the field of tourism, the current prevailing trends in interconnected products, services and experiences can be confirmed (Larivière et al., 2017). The observed EDIT model (Zach & Krizaj, 2016) therefore also focuses on innovation, design and touchpoints. Touchpoints in this context represent physical or virtual locations where the tourist provider (and her sales purposes) connects with tourists and their purchasing ideas and needs (Vargo & Lusch, 2008; Tax, McCutcheon, & Wilkinson, 2013). At the same time, touchpoints provide a message about the detailed planning of each possible point of contact, because on in their entirety do they provide added value to the goods sold.

In tourism, the usual central observation 'consumption' unit is a tourist destination, that is, the geographical area in which tourists spend their vacation time. In today's globalised tourism services, destinations cannot compete only with the price criterion, but also via offered experiences. Experiences are not necessarily to be expensive or highly sophisticated; it is important that the tourist services offered bring positive feelings and memories (Tan, 2016). The transition from technological observations of the service to the holistic observation of the experience brought by the service is not new (Prahalad & Ramaswamy, 2004), but nevertheless points to a change of focus from the operational-implementation level to the user level; where the user is not only a passive receiver of goods, but an active associate in the process of their consumption.

Based on the presented findings – regardless of whether it is a tourist good or good from any other area –, the 'encounter' of the provider with the user of products and services becomes significant at different points in the business process. The EDIT model adds two additional levels (innovation and design) to this perspective, to which one must pay attention at each of the 'encounter points.' In doing so, EDIT aiding in preventing too much attention being given on the development of a single innovation, as it proposes a multifaceted view of each of the points of the business process and the development potentials that hide in it. The main purpose of this approach is to promote the identification of the actual mental and physical steps of the potential customers, which enable comprehensive care for them.

For each of the identified touchpoints at the first level, EDIT stimulates thinking about ways of optimisation and improvement with regard to introducing innovations, for which at each point all categories of innovation that could be further introduced are to be considered; e.g. (Hjalager, 2010) for tourism. This level is mostly engineering, internal, and therefore focused on the knowledge and technologies that the company (alone or with partners) can further develop or purchase to upgrade the existing performance and service provision at each point. The second level focuses on the user, from an external perspective, where the design-thinking methodology is used for introduction of customer related principles. This methodology provides a wide range of comprehensive sustainable approaches to integrating all the elements that influence customer experience and participation in the production and service process (Zomerdijk & Voss, 2010; Shapira, Ketchie, & Nehe, 2017).

As mentioned, the EDIT model focuses on the tourist specifics of such processes. In the continuation of this article, all three EDIT areas (touchpoints, innovation, and design thinking) are introduced from a general business and user perspective.

The EDIT* Model

In this research note, we suggest an enhanced EDIT* model with the following refined dimensions:

1. consumer/customer/user touchpoints,
2. innovation types as well as
3. customer experience and usage categories.

In the sections below we described these redefined dimensions in more detail.

Dimension: Touchpoints

Earlier in this paper, touchpoints were introduced through EDIT model in which the tourism domain is at the centre. It was established that the user of products and services becomes essential at different points in the business process and includes unlimited new opportunities.

Moggridge (2006) defines touchpoint so that the experience behind every segment of customer journey can be transformed into a touchable product or service. Touchpoints that exist before and after that most obvious part of service, also reflect the important moments in that customer journey. The form of the touchpoint may be an advertisement, a card, a mobile phone, a retail store or a salesman. If a service system has enough touchpoints, they can offer a diversity of designed customer experience, and the touchpoint possesses its unique value. The significance of user touchpoint understanding and design impact to business is highlighted by Brown (2009) claiming that only a few details can provide an opportunity for a company to create a unique, good feeling and memorable client experience.

In the EDIT* model, touchpoints in a general context represent opportunities, physical or virtual places and methods where the product (and its sales purposes) connects, directly or indirectly with user needs and their usage ideas. These user touchpoint opportunities create design requirements and challenges that should be carefully analysed, and solutions should be planned and implemented in design to products and services so that final added value of the goods and services can be delivered to customers and users. This needs to be understood throughout the whole product and service design and delivery process.

Similarly, in other domains, such as the machine industry, touchpoints opportunities and related user requirements need to be described and defined prior to the design process and identified and optimised for every user's experience and satisfaction. Touchpoints need also to cover internal customers and indirect users together with end users and customers. For example, operations such as production and delivery process, product sales and marketing, maintenance and lifecycle management do not have similar user touchpoint opportunities and are not systematically treated with same care as that of the end users' and consumers' specific requirements.

EDIT* model promotes and claims that all user touchpoint opportunities should be investigated regardless of their location in the value chain and role in value creation. The user category needs to be investigated widely. When identifying different users and possible user touchpoint opportunities, multiple points of views should be considered. For exam-

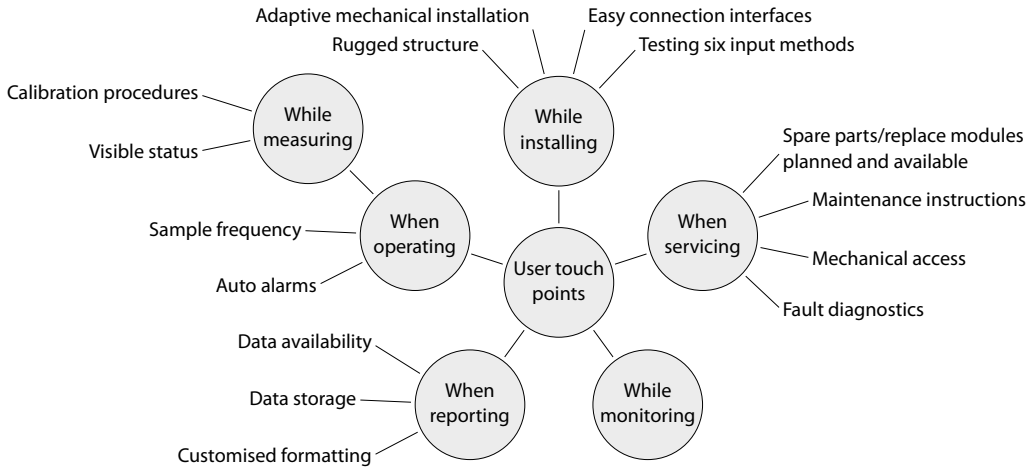

Figure 2 Simple Illustration of Industrial User Touchpoint Opportunities

ple, different touchpoints are found when comparing B2B oriented versus consumer-oriented products and services. Professional users and variations of different business operators are more likely searching for business benefits and total process efficiencies like maintenance and service, and high priority with reliability issues whereas consumer behaviour results in different touchpoints and design needs and priorities.

Dimension: Innovation Types

In the EDIT model, Zach and Krizaj (2017) separated the following five innovation types: (1) product innovation, (2) service innovation, (3) process innovation, (4) managerial innovation and (5) marketing innovation. We see these types as also being relevant for the EDIT* model and suggest adding two further innovation types: (6) market innovation, i.e. pursuing new markets with existing or new product-service offerings and (7) institutional innovation, i.e. developing innovation not only within an organization but also in combination with other institutions (e.g. within an ecosystems).

With the continually increasing trend of digitalisation, product innovations and the service innovations, in particular, need to be analysed in greater detail. First, there is the clear movement in society and economy to transform physical products into digital products. So, instead of purchasing a physical book, the reader uses the digital product: an 'e-book.' Second, existing or newly developed physical products are transferred or enhanced by digital services (Porter & Heppelmann, 2014, 2015). Instead of owning a car it is sufficient to be a member of a car-sharing service. The process of finding, reserving and booking the shared car is facilitated by a digital service: the car-sharing app (Puschmann & Alt, 2016). Figure 3 shows these two developments and further examples of the mentioned product/service types.

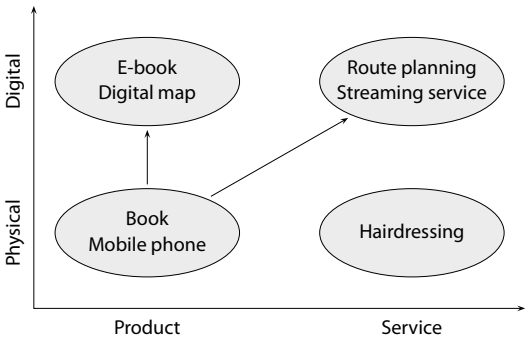

Figure 3 Digital and Physical Products and Services Matrix

Dimension: Customer Experience Design and Usage Categories

Nowadays, new business combinations are being reflected in service systems that can be made up of

employees, technology and customers from several business and private entities, and combined in the so-called 'service encounter 2.0' (Larivière et al., 2017). Thus, in (1) internal search for opportunities for improvement as well as in (2) finding 'second-generation' collaboration opportunities, it is vital that organisations no longer focus solely on the current structures in their facilities and on the optimisation of their processes. It is necessary to focus on customer aspects of process design (Tussyadiah, 2014), in which it does not matter where the company's frontier is, but what the entire experience of the targeted customer should be. In following these guidelines, the main innovations of the EDIT* model (compared to the initial EDIT 'tourist' version) on the first level refer to addressing the broader structure of the possible categories of innovation with the additional emphasis on the technological innovations and generic business processes. On the second level, touchpoints are also thoroughly analysed in terms of cross-sections between diverse technological sectors, service aspects and professional and end-user consumption logic.

A similar situation can be described on the third, customer experience design level. This is no longer about tourist- or service design-related aspects, but about general professional and end-user consumption categories, within which it is possible to improve or develop new user practices and consequently address diverse human needs. Max-Neef's (1991) axiological and existential categories have proved to be highly suitable for providing a comprehensive insight into the spectrum of such human needs. They are combined into a two-dimensional 'fundamental human needs matrix' that addresses the potential plethora of human necessities, describing the possibilities for further optimisation or upgrading the user's experience in each touchpoint with the help of a product or service offered.

Existential categories cover activities related to being (i.e. achieving certain qualities), having (certain things), doing (desired actions) and interacting (in different settings). Axiological categories are, according to Max-Neef, derived from ethical and aesthetic values. They include human inclinations to survival, protection, understanding, participation, leisure, creation, identity and freedom. For each of the potential innovations in the set of eventual touchpoints, all these existential/axiological categories and the resulting needs can be used during the development processes. For each of the pairs in the matrix of both types of categories, Max-Neef list examples of human engagement and existence that can be directly used to verify whether one of the examples can be additionally addressed with the observed product or service. At the same time, the proposed examples can encourage developers to generate new ideas and examples about possible interactions with their developed product and/or service.

From this point forward (i.e. after all eventual human needs opportunities are validated), the development process incorporates the design elements contained in the original EDIT model and summarises the various fine-tuning aspects focusing on the ways of using and interacting with the offered consumer goods. Zomerdijk and Voss (2010) propose six such contextual ways: a 'series of cues' leading tourist on the route between distinct touchpoints. 'Sensory design' addresses the customer's perception of products/services past five basic senses. 'Front-line engagement' is focusing on staff in direct contact with customers. 'Dramatic structure of events' is creating a solid and compelling story about the offered goods. 'The presence of fellow customers' focuses on other customers who come before and after, forming a group that interacts with their emotions and responses. Finally, 'Back/front-stage coupling' focuses on the staff in the entire organisation and the opportunities for them to mutually contribute to the overall customer experience.

Current Research Stage: Generic Strategies and Approach on How to Apply the EDIT* Model

To test the applicability of the proposed EDIT* model, a real-life example has been chosen. It came in the form of a wood moisture content measurement device, equipped with an Internet of Things (IOT) technology, developed as the HUMIWOOD prototype at the University of Valencia, Spain. The development coordinator was introduced with the model's principles and shown the possible venues of further innovation and design steps according to identified and

suggested HUMIWOOD touchpoints. He found the methodology useful since the development department was specialised in wood moisture measurements and general IOT technologies, but did not have any guidelines on how to approach the new combinations of technologies which might open new consumption and business opportunities. The HUMIWOOD proof-of-concept stage resulted in the Erasmus+ project application with identified stages of educating, using, and testing the EDIT* possibilities.

The development approach in the described case presents a technology push orientation with an existing prototype or invention/innovation for which organisations investigate how to push it into the market. In this case, the possible touchpoints are identified for newly available technologies and tools, and design aspects are studied and applied to each of them. The opposite case from the technology push would be an opportunity pull in which opportunities are derived from existing or emerging markets. The existing touchpoints of products/services already on the market are to be identified and through their design aspects suitable technologies, or inventions/innovations would be chosen or redesigned to more efficiently and effectively address the needs of each of the touchpoints.

These two generic strategies (technology push and opportunity pull) have strong similarities to the analysis and strategy area in the business administration literature. In relationship marketing the situational analysis in the marketing planning process is based on two fundamental views:

1. *Market Orientation View (MOV)*. It contains an outside-in perspective and derives results from analysing the external markets: the 'market orientation refers to the organisation-wide generation, dissemination, and responsiveness to market intelligence' (Hollensen & Opresnik, 2015, p. 77).
2. *Resource-Based View (RBV)*. It has an inside-out perspective and analysis the internal resources and matches them with existing opportunities: the 'essential factor, however, is that opportunities are seized where the organisation has an existing or potential advantage through its resource base' (Hollensen & Opresnik, 2015, 78).

In addition to these generic strategies, it is relevant to analyse the technology and the solution options for the market opportunities on the different dimensions of the solution architecture intensively. The Business-Technology-Stack proposed by Brehm (2015) could be a helpful tool for this task.

Future Research

This paper has outlined the EDIT* model for the non-tourism domain and has shown some application of the model. Of course, there is a strong need for future research. This can include, but is not limited to, the following proposal:

Field surveys on the current status of product and service innovation in different sectors and countries should be carried out to identify the actual baseline. A detailed application of the EDIT* model to a specific use case is recommended. A highly useful candidate is the HUMIWOOD case or a similar technology, which requires new or enhanced product-service development and market strategy. The development of further application examples in other industries and areas of usage could be pursued. The extensions of this research on the domain side and in regional reach are helpful and could also include funding opportunities, such as the ERASMUS+ program of the European Union.

For the future research, we suggest following a holistic approach to innovation in integrated product and service development.

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