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Challenges of Total Customer Experience (TCX): Measurement beyond Touchpoints

Christos G. Chatzopoulos

Lean & Continuous Improvement Specialist, Ashcroft Instruments GmbH, Max-Planck-Straße 1, 52499, Baesweiler, Germany,
Christos.Chatzopoulos@ashcroft.com

Marcel Weber

3CI Customer Co-Creation, 5141 HB Waalwijk, the Netherlands, marcelweber4@gmail.com

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Abstract

Customer Experience (CX) is an already known term and is usually measured at one or more “touchpoints”, which are direct and indirect interactions between a customer and a company. Most companies typically use touchpoint measurements as a representation for the Total Customer Experience (TCX). However, one can argue that this representation is inadequate since CX is also determined by what is experienced before, between and after touchpoints, which defines the whole customer journey. This paper discusses the adequacy of TCX measured only through touchpoints and investigates the challenges of (a) defining, (b) modelling and measuring, and (c) managing and improving TCX. First, TCX definition challenges are discussed and a new definition of TCX is proposed, considering the four phases that characterise the whole customer journey that are Initiation, Touchpoints, In-between Touchpoints and Finalization. Second, the challenges of modelling and measuring TCX are addressed and a new TCX model that measures emotions is proposed and explained through a fictitious case example. Third, three challenges for managing and improving TCX are discussed and a new way to manage and improve the TCX performance in a company is presented and applied by using the developed TCX model and the case example.

Key words: *Customer Experience, Customer’s Journey, Touchpoints, Digital Customization*

1. INTRODUCTION

Customer Experience (CX) refers to customer’s impression, which is formed during and after customer’s interaction with company’s assets, such as products, services, employees, facilities, etc. [1]. Products as just solutions are not enough to satisfy a customer, but a full package of support and services is needed, which includes the whole experience of approaching a customer, such as sales, services, contact, financial convenience and the whole business in general. Before that, consumption experience was approached to address issues, such as the role of aesthetic products, multisensory aspects of product enjoyment, the syntactic dimensions of communication, time budgeting in the pursuit of pleasure, product-related fantasies and imagery, feelings arising from consumption, and the role of play in providing enjoyment and fun. Further research should consider customers’ fantasies, feelings, fun, satisfaction and performance [2]. After some years, a new term to describe the economy behind CX was conceived, named Experience Economy [3]. A new kind of thinking and investing on customer’s impressions, emotions and feelings through his/her experience is introduced [4]. Total experience is needed to achieve the business goal of winning and retaining customers’ trust [5]. Furthermore, co-creation experiences can deliver co-

creation value that is an additional contribution to CX [6] [7]. Service experience is considered as another factor named Service CX, which consists of functional, mechanic and humanic clues that influence the rational and emotional perceptions of customers [8].

A Total Customer Experience (TCX) should include an emotional connection between company and customers in order to differentiate the company from its competitors [9]. An experience should provide sensory, emotional, cognitive, behavioural and rational values [10]. A CX “is an interaction between an organization and a customer. It is a blend of an organization’s physical performance, the senses stimulated and emotions evoked, each intuitively measured against customer expectations across all moments of contact” [11: 8]. The relationship between customer and company is evolutionary, which provokes rational, emotional, sensorial, physical and spiritual reactions [12]. All experiences are consumption experiences, which causes something between pleasure and displeasure [13]. A CX involves a process of ongoing perceptions, feelings and direct observation and accumulation of knowledge, skills, emotions, sensations and attitudes [14, 15].

The management of CX should recognize all the needs that customer wants, understand them and transform

them into clues, which create values for customer [8] [16]. The management of CX should understand customer's journey, which means to understand the expectations a customer has before starting the journey and the customer assessment of the journey, which is done by the customer when the journey is over. Experiential marketing is conceived to manage CX and five ways were proposed to engage a customer: sense, feel, react, think, act and relate [10]. More recently, the same author suggests also five steps for CX management: analyse the experiential world of customer, building the experiential world of customer, building experiential platform, designing the brand experience, structuring the customer interface and engaging in continuous innovation [17]. There are four steps for CX and user experience management, which requires lifecycle touchpoints: plan for CX, build a value proposition experiential platform, develop customer interfaces and lifecycle touchpoints, assess and improve [18].

A further and deeper research on conceptualization and validation of CX, management of TCX and CX metrics is needed [19]. The literature published until 2015 faces a lack of research that involves CX and Marketing Management. Homburg et al. [20] approached this lack of research by highlighting the literature gaps and by conceptualizing what is Customer Experience Management. From 2015 to 2018, studies were very promising for CX management. Practices, processes and tools were introduced [21], a review of practices was published [22], a research for B2B Management was conducted [23], a conceptual Model for Digitalization was proposed [24], an approach on hospital management was formed [25], a review in the hospitality field [26] and research note in tourism field [27] were published. A useful diagnostic and benchmark tool for practitioners to identify their current state and to define an improved future state was developed [28].

Based on the recent research on CX, Jain et al. [29], in their review, proposed the following managerial implications:

a) CX is a tool to achieve competitive advantage and it can be considered and managed as a holistic strategic process.

b) Managers should understand CX in terms of co-creation process.

c) Effective management of CX can be established through mapping of experiential process or customer touchpoints and designing strategies for customer's perceptions and needs.

d) Managers should measure CX and they can choose to use an already known/standardized metric or to develop tailor-made metric on their own, which suits to their case.

Research activities on CX and how to start improving it were expanded to financial services and banking system [30-33].

Recently, Bradford [34] inferred that CX is the new Marketing after analysing some market trends referring to customer service in a digital environment. In a digital environment, Digital Customization occurs mostly during touchpoints with customers [35]. Companies use

technology for Digital Customization during touchpoints, therefore touchpoints form an important platform, which influences customer's journey and its outcome, namely the customer's satisfaction. Digital Customization can be used to capture and measure TCX. A good example is a patent of applying Digital Customer Experience for this purpose [35]. On the other hand, there is a sceptical approach on the issue of Digital Customer Experience by addressing some dangers and, in the end, proposing a multichannel approach of paying attention to digital and physical channels as well [36].

By following the previous literature indications, this conceptual work expands some of the implications, analyses them in detail, proposes solutions and introduces new ideas for TCX, such as measuring, managing and improving TCX from a process point of view. Moreover, this paper focuses on customer's emotions and feelings, giving a new approach to CX for TCX. It concerns issues during not only touchpoints, but also In-between Touchpoints, before the initial and after the last touchpoint, and forms a new conceptual approach for TCX without provoking or challenging old approaches. As it is mentioned before, managers can choose already known and/or self-defined metrics for their own cases. The managers' goal should be to use convenient, sufficient and effective tools and metrics for their own purpose.

2. RESEARCH METHODOLOGY AND CHALLENGES OF DEFINING TCX

The research starts with the literature review, continues with identifying the literature gaps on defining and measuring the TCX through customer's journey point of view and ends with a proposed model. This model is explained and analysed through a fictitious example by presenting how the model works in order to overcome the challenges related to modelling and measuring TCX. A CX is defined by the experience of a customer with company's assets in specific time moments, in specific locations, under specific circumstances and is influenced through specific events and actions [37].

1. Is CX shaped and influenced by other actions, other circumstances, which do not happen during touchpoints and therefore, in another place and other time?
2. Is CX defined only through those touchpoints or there are also non-touchpoints, which play a significant role to CX?
3. Do those non-touchpoint moments influence the CX?

For a specific customer journey, like the process of buying a product, the whole customer journey consists of different phases, such as search, purchase, consumption and after-sales phases of a product or a service. Those different phases influence CX for that journey and they are not only phases, which described through touchpoints but also from non-touchpoints [38] [39]. We define a new model for TCX and we introduce the In-between Touchpoints as the period, which is defined between two touchpoints to include the non-touchpoints in the process of TCX. In this model, the TCX refers to one customer, who needs one product or one

service. We define as Initiation the period before the first touchpoint and Finalization as the period after the last touchpoint for that journey, which ends with the disposal of the product or with the cancelation of a service. The customer's journey therefore consists of the following periods, which define the Customer's Journey:

1. Initiation
2. Touchpoints
3. In-between Touchpoints
4. Finalization

2.1 Initiation

The Initiation refers not only to the period before the first touchpoint, but also to all those factors and circumstances, which influence customer's opinion, satisfaction and his/her whole journey. As an example, the Initiation is the existence of a new customer's need or the recalling of an old customer's need to solve an issue or satisfy a need. During this period customer realises his/her need, he/she acknowledges the need to satisfy his/her need, which called "need awareness", and starts to seek for solutions, companies, retailers, products or services.

2.2 Touchpoints

A touchpoint is the already known and well-defined time point, when a customer interacts with a company or assets of a company and it is usually the shortest period of customer's journey. Not all the touchpoints are equally significant for customers, according to a case study [40]. During a touchpoint, technological applications play an important role. Digital Customization tools such as intelligence query platforms, options evaluation tools, configurators, concurrent and co-design platforms and others can be used.

2.3 In-between Touchpoints

The period between two touchpoints is defined as In-between Touchpoint. The reason of defining it is to highlight the significance of the period between two touchpoints, which usually is the longest period of customer's journey. From one touchpoint to the next one many issues can change and influence customer's opinion, feelings, satisfaction and finally the outcome of customer's journey. An In-between Touchpoint is quite risky for a company because there is no any interaction between the customer and the company, so it is difficult to establish a direct influence on customer. The customer can use a company's asset, but the asset cannot respond and adapt to any change, which can be required by the customer. A company's target should be focused on finding ways to provide a respond to the customer and a self-adaptation for its assets, for example an online platform, which provides data of company's assets specifications, including products, services and other desired attributes or solutions, retailers, products or services.

2.4 Finalization

The last period refers to the period, when a customer has fulfilled his direct interaction with assets of a company,

he/she has purchased the product or the service and he/she can use it. The only interaction is the interaction between customer and product or service until disposal and recycling, which is the last phase of product's lifecycle. After-sale services such as maintenance or update are considered as touchpoints.

We introduce a new attributes segmentation of customer's journey (Figure 1). The reason is to analyse customer's journey in detail, to conceptualize TCX, to identify further challenges of modelling, measuring and managing TCX as well as the methods and means through, which all the above can be accomplished.

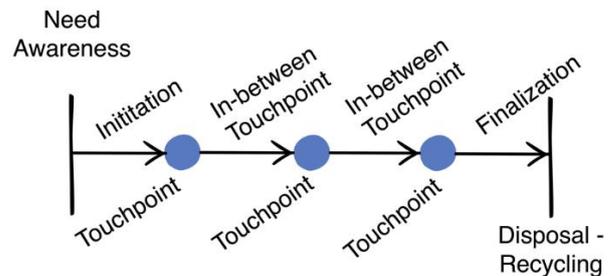


Figure 1. Customer's Journey

3. CHALLENGES OF MODELING AND MEASURING TCX

According to the literature, CX can be measured through touchpoints, where customer interacts with company's assets. There are already many known metrics, such as Net Promoter Score [41], experiential value scale [42], brand experience scale [43], experience quality scale [44], Customer Experience Index - CEI [45], service experience quality scale - EXQ [46], retail customer experience scale [47] or using Quality Management tools to measure CX [48]. Other researchers argue that qualitative research is the only approach to measure CX [49-51]. However, all of them are metrics, which measure CX only during touchpoints and not during non-touchpoints.

A key research question in this paper is if measuring CX only during touchpoints captures and reveals the real CX. Therefore, this paper proposes a way to measure the TCX along the whole customer's journey including all four periods Initiation, Touchpoints, In-between Touchpoints and Finalization.

The challenges of modelling and measuring TCX are the following:

1. Do only touchpoints shape the TCX?
2. Why do not we search and measure non-touchpoints, too?
3. Can a function, which includes Touchpoints, In-between Touchpoints, Initiation and Finalization of customer's journey, be an outcome of such TCX measurement?
4. Is such an outcome measurable?
5. Would it be optimal to achieve customer's satisfaction in only one touchpoint without any In-between Touchpoints at all?

6. A customer wants a solution, such as a product or a service or information for some reasons. Do these reasons shape or influence CX?
7. When a customer receives, and uses a product or a service, he/she is influenced by that. Therefore, CX is influenced and changed. How can we measure this change?

The Kano model measures and maps customer's satisfaction and solutions' implementation for the customer [52, 53]. Satisfaction changes from the beginning of customer's journey until the end, which is the end of product or service lifecycle. Target of a company is to satisfy customer by providing a solution (product or service) to his/her issue. Customer satisfaction is built through time and TCX is influenced through different stages of value creation, such as Value in pre-use stage, Value in use stage and Value in post-use stage [29]. The satisfaction is expressed through feelings and emotions. Another key question in this research is whether CX should be represented in terms of feelings and emotions rather than in terms of satisfaction. Hence, we continue our research by asking the following questions about feelings and emotions to approach deeper the challenges of modelling and measuring TCX:

1. Do customer's feelings and emotions influence the outcome of the function TCX?
2. Would it be possible to measure feelings and emotions, although such an action can lead into wrong results because it is a problematic action [28]?
3. By which means can we overcome a problematic measurement?
4. It is a fact that human reactions and signals can drive to wrong results, how can we break them through?

Metrics for measuring emotions already exist such as Emotions Profile Index (EPI) [54], Differential Emotions Scale (DES) [55], Positive and negative affect schedule (PANAS) [56], Pleasure – Arousal – Dominance (PAD) [57], Evaluative Space Grid [58], Consumption Emotions Set (CES) [59], Self-Assessment Manikin (SAM) [60] and Product Emotion Measurement Instrument (PrEmo) [61]. All, above listed, challenges or questions illustrate the problems and difficulties that should be addressed, in order to obtain an adequate measurement of CX throughout a journey. However, it would take several studies to address all of these questions – that should not be mistaken as research questions, but rather as lines of thoughts for our following discussion. We would rather propose a way of thinking that implicitly addresses these challenges, instead of answering the questions separately.

We therefore introduce a theory for TCX and the following TCX model to measure TCX through the whole customer's journey, including all the four periods. The theory is based on capturing customer's emotional status by capturing his/her emotions over customer's journey time. Emotions are captured over time and analysed by using the hierarchy of consumer emotions [62]. The following Table 1 shows the scale by which emotions are organized and categorized in the TCX model. The TCX model is customer's journey-oriented and not a

company-oriented model, which means that the data describe emotions of one customer, who needs one product.

Table 1. TCX model scale for emotions

Value	Affect	Emotion	Emotional status
4	Positive	Pride	Pride
3		Love	Sexy, Romantic, Passionate, Loving, Sentimental, Warm-hearted
2		Happiness	Optimistic, Encouraged, Hopeful, Pleased, Joyful, Relieved, Thrilled, Enthusiastic
1		Contentment	Contented, Fulfilled, Peaceful
0	Neutral	No emotion	Neutral
-1	Negative	Shame	Embarrassed, Ashamed, Humiliated
-2		Sadness	Depressed, Sad, Miserable, Nostalgia, Guilty
-3		Fear	Scared, Afraid, Panicky, Nervous, Worried, Tense
-4		Anger	Angry, Frustrated, Irritated, Unfulfilled, Discontented, Envious, Jealous

The TCX model is shown below, figure 2.

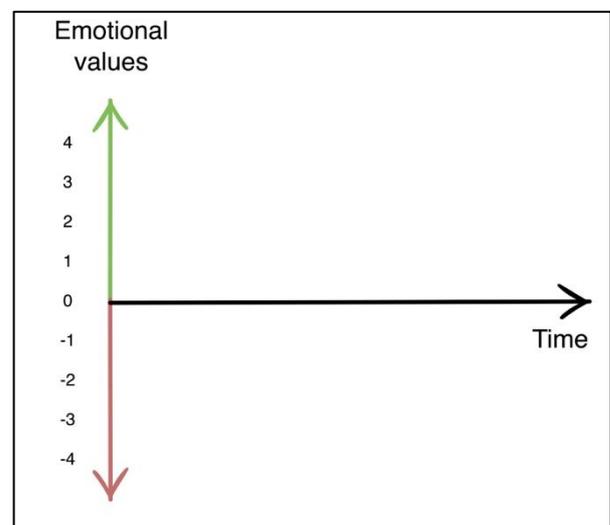


Figure 2. TCX model

Let us demonstrate our model with an example of a fictitious customer journey by performing a graph analysis for TCX. The following graph may result from capturing emotions and presenting them in a time scale diagram, see figure 3.

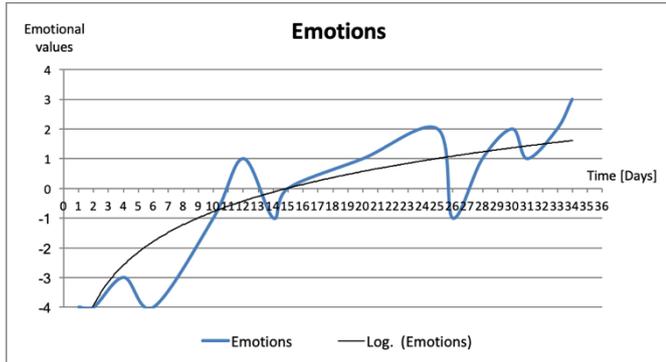


Figure 3. TCX example of a fictitious customer journey

The time points in the TCX model when emotions are captured are Initialization, Touchpoints, In-between Touchpoints and Finalization. Technological means are needed to capture those data not only during a touchpoint, but also during the other three time periods in customer’s journey. The trend in the graph shows a logarithmic progress and it should be a logarithmic progress for many reasons, which are analysed below. The following example is a fictitious example and the data are related solely to this example.

The purpose of this example is to make the TCX model clear to the readers. A logical and normal progress of emotions over time during customer’s journey could be as follows. At the beginning of customer’s journey (1st and 2nd day), customer feels an absence of something, which affects him/her negative and the *value* could be at (-4) with the emotion of anger. He/she is upset because he/she has needs and they must be fulfilled. Then he/she starts to seek for solutions (4th day), such as a product or a service or just a company.

This seeking process improves his/her emotional status, but fear of not finding a good solution exists as a feeling. The next escalation could lead into anger again because he/she still cannot fulfil his/her needs (6th day). We name this phenomenon as “emotional decrease”, which means a decrease in the *value* from a negative to a more negative or from positive to less positive or from positive to neutral and/or to negative level. Later there could be sadness and then shame when he/she expresses his/her needs to someone or to a company’s agent (10th day).

The neutral phase is revealed when logic thoughts about a decision on possible solutions are created (11th day). The positive *value* starts with contentment and it could be expressed when customer finds a good solution (12th day). Later he/she could realise that some attributes of the solution are quite insufficient and therefore the progress performs a decline to neutral and deeper to (-1) (14th day). The progress of TCX until the end of customer’s journey (34th day), continuous as follows in Table 2 and is presented in figure 3.

4. CHALLENGES OF MANAGING AND IMPROVING TCX

After modelling and measuring the CX, we approach CX as a process from the Management point of view. CX is sometimes a long time on-going process.

Re-using our fictitious example of a customer journey from section 3, we introduce the following TCX improvement goal for a company, see figure 4. Our recommendations are that the company should manage the TCX first, before it can improve it.

Table 2. Emotional *values* resulting from the example journey

Days	Emotional values
1	-4
2	-4
4	-3
6	-4
10	-1
12	1
14	-1
15	0
20	1
25	2
26	-1
28	1
30	2
31	1
33	2
34	3

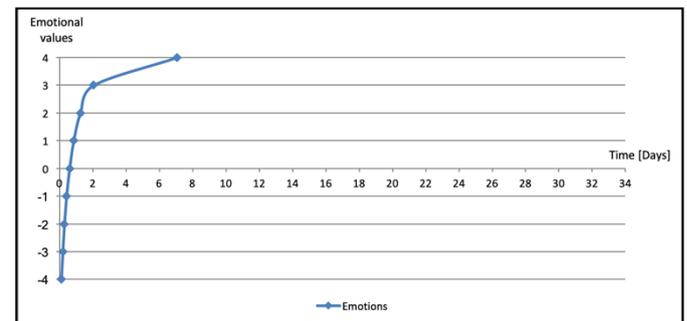


Figure 4. TCX improvement goal

The TCX improvement goal should be close to a logarithmic curve as shown above, because emotions should be positive as soon as possible, which means that customer is satisfied soon or fast enough as the customer desires. Waiting time for customer is unpleasant, ineffective, costly and therefore waste. Emotions and feelings during a waiting mode are usually negative. Consequently, customer should be satisfied as quickly as possible, avoiding any waiting and causing positive emotions to customer.

Theoretically boosting emotions faster, in less amount of time by using more resources to satisfy customer faster, the theoretical improvement goal should look like presented below, figure 5.

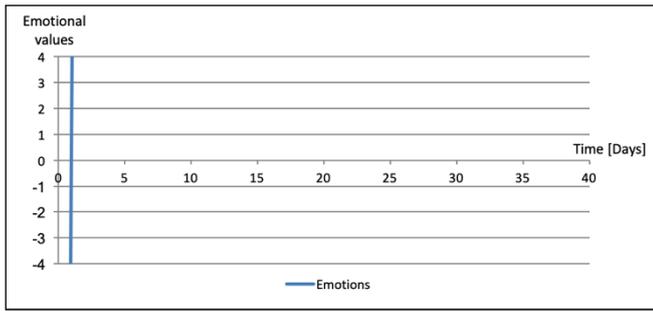


Figure 5. Theoretical improvement goal

For example, a customer needs a new mobile phone and he/she is aware of it by feeling the absence of new features, technologically advances, new design etc. Therefore, he/she starts from a negative value of (-4). If he/she wants a good solution in a short period of time he/she will use technologies and resources, such as searching in internet. Therefore, to fulfil the need, he/she uses an internet connection, a system or device in order to access the internet, looks for companies that have websites, where they present their products, which are continuously updated by the companies. The customer searches, finds and compares different solutions to each other, etc. Finally, he/she decides, purchases and the solution is delivered and utilised. After all those actions during the customer's journey, the customer reaches, let us assume, the emotional value of (3), which should be the target in the customer's journey: to reach a positive value. All those actions from (-4) to reach to (3) need time. To boost those actions to accomplish them in less time and to satisfy the customer, faster in less time, more resources, technological advances etc. are probably required. Such an action may be feasible but can be unaffordable for both a company and the customer. Therefore, such a performance as represented by figure 5 will be very rare and therefore a theoretical improvement goal.

Emotions and feelings should be improved fast and with the right treatment to achieve satisfaction. Improving emotions from a negative to a neutral, value of (0), and to a positive level, value (1) to value (2), can be and should be achieved in a short period of time. But reaching a higher level of positive emotions and feelings, value (3) to value (4), may not be as easy as reaching lower levels, value (-3) to value (0). A company probably needs more time, resources, assets and effort to improve from value (2) to value (3) and then to value (4). Reaching lower levels of the positive emotions and feelings fast and economically is an advantage in a competitive market and a win for the customer, too. Every customer wants to be 100% satisfied but many times an 80% is acceptable, too. A trade-off reaching 100% customer's satisfaction fast and performing low company's cost can be an acceptable improvement goal for TCX.

The challenges in TCX model for management could be summarized as follows in the next sub-sections. The following minimization problems are not operations research minimization problems but managerial problems. Some of them could be approach through optimization problems but in the current paper such an approach is not intended. Otherwise, companies are free

to choose how to approach the following minimization problems, such as taking managerial measures, making improvements, following continuous improvement approach, making new technological investments and other business activities. In the current work, we define the three following problems.

4.1 Minimize the customer's journey time

Every customer wants to fulfil his/her needs or to reach the positive levels fast. Therefore, the time between emotional changes or stable levels with no emotional change and the total customer's journey time should be minimized, see figure 6, and Eq. (1), where $j=1,2,3,\dots,J, J \in \mathbb{N}^*$.

In our fictitious example, time from value (-4) to value (-4) is 1 day, according to Table 2, time from value (-4) to value (-3) is 2 days, time from value (-3) to value (-4) is 2 days, etc. The total customer's journey lasts 33 days to reach satisfaction. After that, the customer can enjoy satisfaction for a much longer period because of the long lifecycle and excellent quality of a product or a service, which both are desired by the customer.

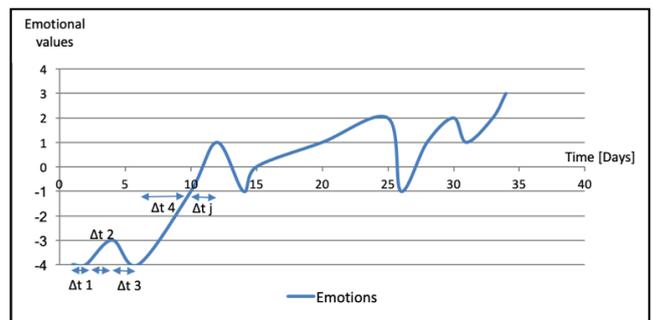


Figure 6. Time in TCX model

$$Total\ customer\ journey\ time = \min \left\{ \sum_{j=1}^J \Delta t_j \right\} \quad (1)$$

4.2 Minimize total emotional decreases in customer's journey

During customer's journey, one or more emotional decreases can be performed. Therefore, minimizing emotional decreases is a challenge for management, see figure 7, and Eq. (2), where $i=1,2,3,\dots,I, I \in \mathbb{N}^*$. Each decrease in emotional value takes time to increase and to reach a higher level than before, and can therefore be regarded as a waste of time and effort. The more and the bigger the decrease, the higher is the waste.

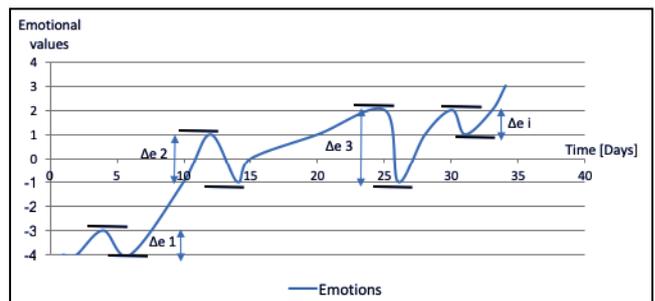


Figure 7. Emotional decreases in TCX model

$$Total\ emotional\ decrease = \min \left\{ \sum_{i=1}^I \Delta e_i \right\} \quad (2)$$

4.3 Minimize the company's effort to improve TCX

The improvement *effort* is the area between the curve of Emotions from the example, figure 3, and improvement goal curve for this example, figure 4, as shown both below in figure 8.

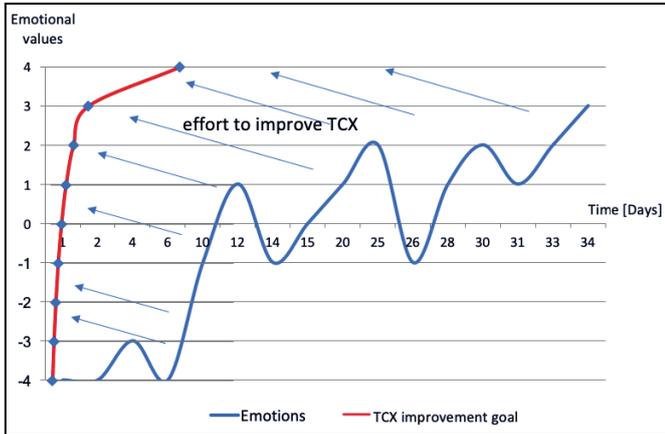


Figure 8. Effort for improvement in TCX model

The area between the two curves is measured as follows:

$$Effort = \int_{\min\ value}^{\max\ value} \left[\begin{matrix} \text{Emotions graph (value)} - \\ \text{Improvement goal graph (value)} \end{matrix} \right] d(\text{value}) \quad (3)$$

By expressing the two curves as functions of (*emotional*) *value*, it follows that: Emotions (*value*) curve > Improvement goal (*value*) curve, where:

- min *value* is the minimum *value* that customer has expressed for his emotions in TCX model,
- max *value* is the maximum *value* that customer has expressed for his emotions in TCX model,
- Emotions graph *value* is the function (*value*), which expresses TCX given by the customer,
- Improvement goal graph *value* is the function (*value*), which expresses the TCX improvement goal.

For calculation reasons, the logarithmic trend lines of graphs could be used, as shown below figure 9.

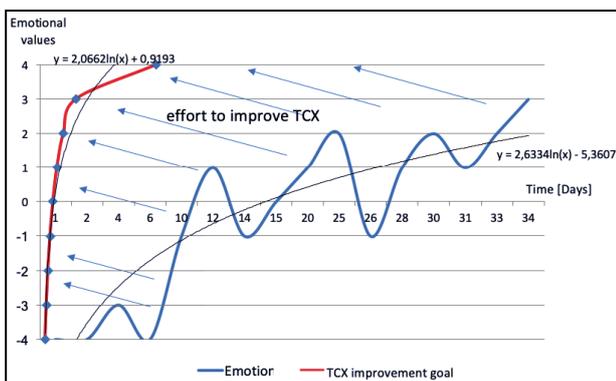


Figure 9. Logarithmic trend lines

For the example customer journey, we have used the equations of Emotions curve and Improvement goal curve are respectively:

$$y = 2,6334\ln(x) - 5,3607 \quad (4)$$

$$y = 2,0662\ln(x) + 0,9193 \quad (5)$$

We solve to *x* in order to integrate to Emotions *value*, *yy'* axis. So, we have respectively:

$$x = e^{\frac{y+5,3607}{2,6334}} \quad (6)$$

$$x = e^{\frac{y-0,9193}{2,0662}} \quad (7)$$

By using Eq. 3 and min *value* is (-4), max *value* is (3) and not (4) because max emotion *value* in the example is *value* (3), Emotions curve is expressed by Eq. (6) and Improvement goal curve is expressed by Eq. (7) we get the following equation (8).

$$Effort = \int_{-4}^3 \left[e^{\frac{y+5,3607}{2,6334}} - e^{\frac{y-0,9193}{2,0662}} \right] d(y) \quad (8)$$

By solving the Eq. (8) we get the result of *Effort* = 45,2798 displacements of emotions (*yy'* *value*) with respect to time (*xx'* *value*). Displacements of emotions are practically the emotional change of customer from one emotion *value* to another one. From company's point of view, one displacement can be estimated by an amount of cost and the *Effort*, which is the total displacements, can be estimated into an amount of cost, too.

Many companies make efforts to improve CX. How a company can improve physically TCX? Some of them share results and make proposals on how to improve CX on the web.

An example follows [63]:

- Build goodwill with customers.
- Fast-track cost reductions, such as wasted time, resources, and energy.
- Build employee morale.
- Reap ROI from investments in Voice of Customer (VoC), CRM, customer care, etc.
- Systematic CX improvement by affecting the entire organism.
- Build and operate Cross-functional teams
- Engage everyone in Voice of Customer (VoC) actions to gain everyone's action on key drivers.
- Resolve & prevent customer pain systematically by using root cause analysis, formal complaint management, quality tools, organizational learning, and systematic prevention and communication.
- Enable customer-focused daily work by using CX internal excellence criteria in their decision-making.

5. DISCUSSION AND CONCLUSIONS

In this paper, we have discussed the challenges of measuring and improving TCX throughout a customer journey. We distinguish TCX from the old version of Total Customer Experience (TCE) because of our new approach. It was concluded that current state of literature [16, 64-67] has shortcomings in representing the total customer experience, because they either confuse TCX with the CX measured at a discrete touchpoint – omitting the customer journey point-of-view – or record the TCX as an average of CX-measures at touchpoints or as an average of CX-measures of more customers. We have stated several challenges in discussion questions, which we have dealt with by introducing a new way of thinking in measuring and improving the TCX from customer's and not company's point of view. Two main challenges were explicitly addressed:

1. The challenge to measure CX not only at touchpoints, but in between-touchpoints as well.
2. The challenge to represent CX in terms of feelings and emotions rather than in terms of satisfaction.

Directions for TCX challenges are analysed and addressed to reveal the feasibility of conceptualizing, measuring and managing CX. This paper introduces TCX for customer's journey assessment. The goal is to conceptualise measure and manage (improve) customer's journey and its phases (Initialization, Touchpoints, In-between Touchpoints and Finalization), as discussed above.

A new model for TCX is presented. A new way to measure TCX model is addressed clearly by a fictitious, but realistic example. When something is measured, it could be managed, too. Therefore, a new way to manage (improve) the current TCX performance in a company is presented and addressed.

The proposed TCX model can be used by practitioners in real cases.

Future studies can overcome the limitations of the current research, such as applications of TCX model in real cases in the market, proof of the theory and the conceptual approach through facts and real data and improving the proposed TCX model.

The technological challenge to develop techniques and tools to capture emotions not only during touchpoints but also during the whole customer's journey can be addressed through a future research. Statistical models and methods to analyse those data, referring to capturing emotions, can be tested and improved.

Finally, further research questions can be addressed, such as the following. Are surveys good enough to capture and analyse emotions? On-line tools and digitalization technologies, such as on-line configurators, are used to capture data from customers during touchpoints. Are they sufficient to capture and analyse emotions during the whole customer's journey and how? Can other sciences, such as Biology and Psychology, contribute to this action of capturing and analysing emotions during customer's journey and how?

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6. REFERENCES

- [1] Carbone, L.P. and Haeckel, S.H. (1994), "Engineering Customer Experiences", *Marketing Management*, Vol. 3, No. 3, pp. 8-19.
- [2] Holbrook, M.B. and Hirschman, E.C. (1982), "The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun", *Journal of Consumer Research*, Vol. 9, No. 2, pp. 132-40.
- [3] Pine, J.B. and Gilmore, J.H. (1998), "Welcome to the Experience Economy", *Harvard Business Review*, Vol. 76, pp. 97-105.
- [4] Pine, J.B. and Gilmore, J.H. (1999), "The Experience Economy: Work Is Theatre & Every Business a Stage", *Harvard Business Press*.
- [5] Grönroos, C. (2006), "Adopting a Service Logic for Marketing", *Marketing Theory*, Vol. 6, No. 3, pp. 317-333.
- [6] Prahalad, C.K. and Ramaswamy, V. (2004), "Co-Creation Experiences: The Next Practice in Value Creation", *Journal of Interactive Marketing*, Vol. 18, No. 3, pp. 5-14.
- [7] Prahalad, C.K. and Ramaswamy, V. (2004), "The Future of Competition: Co-Creating Unique Value with Customers", *Harvard Business Press*.
- [8] Berry, L.L., Wall, E.A. and Carbone, L.P. (2006), "Service Clues and Customer Assessment of the Service Experience: Lessons from Marketing", *The Academy of Management Perspectives*, Vol. 20, No. 2, pp. 43-57.
- [9] Berry, L.L. and Carbone, L.P. (2007), "Build Loyalty through Experience Management", *Quality Progress*, Vol. 40, No. 9, pp. 26.
- [10] Schmitt, B. (1999), "Experiential Marketing", *Journal of Marketing Management*, Vol. 15, No. 1-3, pp. 53-67.
- [11] Shaw, C. (2007), *The DNA of Customer Experience: How Emotions Drive Value*, Springer.
- [12] Gentile, C., Spiller, N. and Noci, G. (2007), "How to Sustain the Customer Experience: An Overview of Experience Components That Co-Create Value with the Customer", *European Management Journal*, Vol. 25, No. 5, pp. 395-410.
- [13] Woodward, M.N. and Holbrook, M.B. (2013), "Dialogue on Some Concepts, Definitions and Issues Pertaining to 'Consumption Experiences'", *Marketing Theory*, Vol. 13, No. 3, pp. 323-344.
- [14] Palmer, A. (2010), "Customer Experience Management: A Critical Review of an Emerging Idea", *Journal of Services Marketing*, Vol. 24, No. 3, pp. 196-208.
- [15] Schmitt, B. (2011), "Experience Marketing: Concepts, Frameworks and Consumer Insights", *Foundations and Trends® in Marketing*, Vol. 5, No. 2, pp. 55-112.
- [16] Berry, L.L., Carbone, L.P. and Haeckel, S.H. (2002), "Managing the Total Customer Experience", *MIT Sloan Management Review*, Vol. 43, No. 3, pp. 85-89.
- [17] Schmitt, B.H. (2010), *Customer Experience Management: A Revolutionary Approach to Connecting with Your Customers*, John Wiley & Sons.
- [18] Henry, M. and Greenhalgh, S. (2005), "Customer Experience and Product Leadership", *Engineering Management*, Vol. 15, No. 6, pp. 44-47.
- [19] Fineman, S. (2004), "Getting the Measure of Emotion-and the Cautionary Tale of Emotional Intelligence", *Human Relations*, Vol. 57, No. 6, pp. 719-740.
- [20] Homburg, C., Jozić, D. and Kuehnl, C. (2017), "Customer experience management: toward implementing an evolving marketing concept", *Journal of the Academy of Marketing Science*, Vol. 45, No. 3, pp. 377-401.
- [21] Benzarti, I. and Mili, H. (2017), "A Development Framework for Customer Experience Management Applications: Principles and Case Study", e-Business Engineering (ICEBE) 2017 proceedings of the IEEE 14th International Conference in Shanghai, China.
- [22] Arkadan, F., Macdonald, E.K. and Wilson H.N. (2017), "Customer Experience Management Practices: A Systematic Literature Review", (Abstract) In: Stieler M. (Eds.) *Creating Marketing Magic and Innovative Future Marketing Trends. Developments in Marketing Science proceedings of the Academy of Marketing Science*, Springer, Cham.
- [23] Zolkiewski, J., Story, V., Burton, J., Chan, P., Gomes, A., Hunter-Jones, P., O'Malley, L., Peters, L.D., Raddats, C. and Robinson,

- [24] W. (2017), "Strategic B2B customer experience management: the importance of outcomes-based measures", *Journal of Services Marketing*, Vol. 31, No. 2, pp. 172-184.
- [25] Doherty, E., Carcary, M., Conway, G. and Crowley, C. (2017), "Customer Experience Management (CXM)–Development of a Conceptual Model for the Digital Organization", ECISM 2017 proceedings of the 11th European Conference on Information Systems Management in Genoa, Italy, Academic Conferences and Publishing Limited.
- [26] Won, Y.H., Kim, J.H., Jung, E.H., Kwak, E.A., Yang, Y.J., Shin, S.J., Kim, Y. H. and Kim, J. H. (2017), "Customer Experience Management for Cancer Patients in a Tertiary Hospital", *Journal of Korean Clinical Nursing Research*, Vol. 23, No. 3, pp. 321-331.
- [27] Kandampully, J., Zhang, T. and Jaakkola, E. (2018), "Customer experience management in hospitality: A literature synthesis, new understanding and research agenda", *International Journal of Contemporary Hospitality Management*, Vol. 30, No. 1, pp. 21-56.
- [28] Brochado, A., Troilo, M. and Shah, A. (2017), "Airbnb customer experience: Evidence of convergence across three countries", *Annals of Tourism Research*, Vol. 63, No. C, pp. 210-212.
- [29] Weber, M. and Hofsink, A. (2018), "Design and Development of the CEM-Dashboard: A Diagnostic Tool to Determine Your Current Position and Improvement", *Directions in Customer Experience Management, Customization 4.0*, Springer, Cham, pp. 405-421.
- [30] Jain, R., Aagja, J. and Bagdare, S. (2017), "Customer Experience—a Review and Research Agenda", *Journal of Service Theory and Practice*, Vol. 27, No. 3, pp. 642-662.
- [31] Maklan, S., Antonetti, P. and Whitty, S. (2017), "A Better Way to Manage Customer Experience: Lessons from the Royal Bank of Scotland", *California Management Review*, Vol. 59, No. 2, pp. 92-115.
- [32] Mbama, C.I. and Ezepeue, P.O. (2018), "Digital banking, customer experience and bank financial performance: UK customers' perceptions", *International Journal of Bank Marketing*, Vol. 36, No. 2, pp. 230-255.
- [33] Van Thiel, D. and Van Raaij, F. (2017), "Explaining customer experience of digital financial advice", *Economics*, Vol. 5, No. 1, pp. 69-84.
- [34] Ho, J.C. and Wei, T.Y. (2017), "The Interactive Effects of Product Categories and Channel Types on Perceived Risk, Customer Experience and Transaction Cost", PICMET 2017 proceedings of the Portland International Conference on Management of Engineering and Technology in Portland, USA, pp. 1-3, IEEE.
- [35] Bradford, R. (2016), "Customer Service is The New Marketing", available at: <https://www.forbes.com/sites/oracle/2015/08/20/customer-service-is-the-new-marketing/#> (accessed: 25 November 2018).
- [36] Wohlwend, J.L. and Berg, M.L. (2018), Westwood Capital Partners Inc., "Method and System for Entry of Customer Experience Feedback with Real-Time Automated Filtering and Evaluation of Feedback, and Transmission of Real-Time Notification to Selected Personnel Based on Feedback Evaluation in a Flexible Messaging and Workflow System", U.S. Patent Application 15/569, 309.
- [37] Weber, M. and Chatzopoulos, C.G. (2018), "The dangers of focusing on digital customer experience", MCP-CE 2018 proceedings of the 8th International Conference on Mass Customization and Personalization – Community of Europe DIGITAL CUSTOMER EXPERIENCE in Novi Sad, Serbia, pp. 327-334.
- [38] Coimbatore, P.K. and Ramaswamy, V. (2003), "The New Frontier of Experience Innovation", *MIT Sloan Management Review*, Vol. 44, No. 4, pp. 12-18.
- [39] Verhoef, P.C., Lemon, K.N., Parasuraman, A., Roggeveen, A., Tsiros, M. and Schlesinger, L.A. (2001), "Customer Experience Creation: Determinants, Dynamics and Management Strategies", *Journal of Retailing*, Vol. 85, No. 1, pp. 31-41.
- [40] Wyner, G.A. (2003), "How Do You Measure the Customer Experience?", *Marketing Research*, Vol. 15, No. 1, pp. 6-7.
- [41] Aichner, T. and Gruber, B. (2017), "Managing Customer Touchpoints and Customer Satisfaction in B2B Mass Customization: A Case Study", *International Journal of Industrial Engineering and Management*, Vol. 8, No. 3, pp. 131-140.
- [42] Reichheld, F.F. (2003), "The One Number You Need to Grow", *Harvard Business Review*, Vol. 81, No. 12, pp. 46-55.
- [43] Mathwick, C., Malhotra, N. and Rigdon, E. (2001), "Experiential Value: Conceptualization, Measurement and Application in the Catalog and Internet Shopping Environment", *Journal of Retailing*, Vol. 77, No. 1, pp. 39-56.
- [44] Zarantonello, L., Schmitt, B.H. and Brakus, J.J. (2007), "Development of the Brand Experience Scale", *ACR North American Advances*.
- [45] Chang, T.Y. and Horng, S.C. (2010), "Conceptualizing and Measuring Experience Quality: The Customer's Perspective", *The Service Industries Journal*, Vol. 30, No. 14, pp. 2401-2419.
- [46] Kim, S.H., Cha, J.M., Knutson, B.J. and Beck, J.A. (2011), "Development and Testing of the Consumer Experience Index (CEI)", *Managing Service Quality: An International Journal*, Vol. 21, No. 2, pp. 112-132.
- [47] Klaus, P.P. and Maklan, S. (2012), "EXQ: A Multiple-Item Scale for Assessing Service Experience", *Journal of Service Management*, Vol. 23, No. 1, pp. 5-33.
- [48] Bagdare, S. and Jain, R. (2013), "Measuring Retail Customer Experience", *International Journal of Retail & Distribution Management*, Vol. 41, No. 10, pp. 790-804.
- [49] Sukwadi, R. (2015), "Utilizing customer experience management framework to create a delightful service experience", *International Journal of Industrial Engineering and Management*, Vol. 6, No. 1, pp. 29-42.
- [50] Hirschman, E.C. and Holbrook, M.B. (1982), "Hedonic Consumption: Emerging Concepts, Methods and Propositions", *The Journal of Marketing*, Vol. 46, No. 3, pp. 92-101.
- [51] Jüttner, U., Schaffner, D., Windler, K. and Maklan, S. (2013), "Customer Service Experiences: Developing and Applying a Sequential Incident Laddering Technique", *European Journal of Marketing*, Vol. 47, No.5/6, pp. 738-769.
- [52] Ordenes, F.V., Theodoulidis, B., Burton, J., Gruber, T. and Zaki, M. (2014), "Analyzing Customer Experience Feedback Using Text Mining: A Linguistics-Based Approach", *Journal of Service Research*, Vol. 17, No. 3, pp. 278-295.
- [53] Churchill, G.A. Jr. and Surprenant, C. (1982), "An Investigation into the Determinants of Customer Satisfaction", *Journal of Marketing Research*, Vol. 19, No. 4, pp. 491-504.
- [54] Kano, N. (1984), "Attractive Quality and Must-Be Quality", *Hinshitsu (Quality, The Journal of Japanese Society for Quality Control)*, Vol. 14, pp. 39-48.
- [55] Plutchik, R. and Kellerman, H. (1974), "Manual of the emotions profile index", Los Angeles: Western Psychological Services.
- [56] Izard, C.E. (1977), *Human emotions*, Plenum, New York, NY, USA.
- [57] Watson, D, Clark, L.A. and Tellegen, A. (1988), "Development and validation of brief measures of positive and negative affect: the PANAS scales", *Journal of Personality and Social Psychology*, Vol. 54, No. 6, pp. 1063-1070.
- [58] Mehrabian, A. and Russell, J.A. (1974), *An approach to environmental psychology*, The MIT Press, Cambridge, MA, USA.
- [59] Larsen, J.T., Norris, C.J., McGraw, A.P., Hawley, L.C. and Cacioppo, J.T. (2009), "The evaluative space grid: A single-item measure of positivity and negativity", *Cognition and Emotion*, Vol. 23, No. 3, pp. 453-480.
- [60] Richins, M.L. (1997), "Measuring Emotions in the Consumption Experience", *Journal of Consumer Research*, Vol. 24, No. 2, pp. 127-146.
- [61] Bradley, M.M. and Lang, P.J. (1994), "Measuring emotion: The self - assessment manikin and the semantic differential", *Journal of Behavior Therapy and Experimental Psychiatry*, Vol. 25, No. 1, pp. 49-59.
- [62] Desmet, P.M.A. (2002), *Designing Emotions*, (Ph.D. Dissertation), Delft University of Technology, The Netherlands.
- [63] Laros, F.J.M. and Steenkamp, J.B.E.M. (2005), "Emotions in Consumer Behavior: A Hierarchical Approach", *Journal of Business Research*, Vol. 58, No. 10, pp. 1437-1445.
- [64] Hunsaker, L. (2018), "Customer Experience Improvement Is a Team Sport", available at: https://www.sas.com/en_us/whitepapers/forbes-data-elevates-customer-experience-108235.html?utm_source=google&utm_medium=cpc&utm_campaign=ci-global&utm_content=GMS-36657&gclid=Cj0KCQjw6rXeBRD3ARIsAD9ni9BXeZ8BY1eFrSRcf-5DaUrgD8hFtlAbtzQQ-20cVSGeAQYyz3yUYZwaAjzIEALw_wcB (accessed: 10 June 2018).
- [65] Petre, M., Minocha, S. and Roberts, D. (2006), "Usability beyond the website: an empirically-grounded e-commerce evaluation instrument for the total customer experience", *Behaviour & Information Technology*, Vol. 25, No. 2, pp. 189-203.
- [66] Carbone, L.P. (1998), "Total customer experience drives value", *Management Review*, Vol. 87, No. 7, pp. 62-63.

[67] Rowley, J. (1999), "Measuring total customer experience in museums", International Journal of Contemporary Hospitality Management, Vol. 11, No. 6, pp. 303-308.

[68] Mascarenhas, O.A., Kesavan, R. and Bernacchi, M. (2006), "Lasting customer loyalty: a total customer experience approach", Journal of Consumer Marketing, Vol. 23, No. 7, pp.397-405.

Izazovi ukupnog iskustva korisnika (TCX): Merenje izvan dodirnih tačaka

Christos G. Chatzopoulos, Marcel Weber

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Apstrakt

Iskustvo korisnika (CX) je od ranije poznata veličina koja se obično meri u jednoj ili više „dodirnih tačaka“ koje predstavljaju direktne i indirektno interakcije između korisnika i preduzeća. Većina preduzeća obično koristi merenja u dodirnim tačkama kao prikaz za ukupno iskustvo korisnika (TCX). Međutim, može se ustvrditi da je ovaj način prikazivanja neadekvatan budući da je CX takođe određen onim što se doživi pre, između i nakon dodirnih tačaka, a što definiše ukupni doživljaj korisnika. Ovaj rad razmatra adekvatnost TCX-a koji se meri samo kroz dodirne tačke i istražuje izazove (a) definisanja, (b) modelovanja i merenja, i (c) upravljanja i poboljšanja TCX-a. Kao prvo, u radu se raspravlja o izazovima definicije TCX-a i predlaže se nova definicija TCX-a, uzimajući u obzir četiri faze koje karakterišu ukupni doživljaj korisnika, a to su: Inicijacija, Dodirne tačke, Periodi između dodirnih tačaka i Finalizacija. Kao drugo, rad obrađuje izazove modelovanja i merenja TCX-a i predlaže novi TCX model koji meri emocije za čije je objašnjene upotrebljen fiktivan primer. Kao treće, u radu: se raspravlja o tri izazova za upravljanje i unapređenje TCX-a; je predstavljen i primenjen novi način za upravljanje i unapređenje TCX performansi u preduzeću.

Ključne reči: *Iskustvo korisnika, ukupni doživljaj korisnika, dodirne tačke, digitalna personalizacija*