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MEASURING DIGITAL TRANSFORMATION

WHITE PAPER

AN EMPIRICAL APPROACH TO MEASURING PHYGITAL JOURNEYS

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Across industries, digital transformation promises more efficient operations, keener market insights, and greater productivity with reduced overhead. It also offers the prospect of swifter, more satisfying experiences for customers. The Covid-19 pandemic has only accelerated the pace at which many companies implement large-scale digitization efforts.

But recent research shows that 70% of digital transformation fails to achieve its goals. Worse still,

the bad news tends to come at the end of incompletely conceived digitization initiatives, and even then may be difficult to measure and correct: half of all CEOs have no digital transformation success metrics by which to judge the benefits, or indeed the completion, of such efforts.

This paper describes a model for measuring the extent of digital transformation along the customer journey, and the success of that transformation over time.



DECONSTRUCTING THE CUSTOMER EXPERIENCE

The customer experience is central to the prospects of nearly every business on the planet. As Steve Jobs once observed, “You’ve got to start with the customer experience and work backwards to the technology. You can’t start with the technology and try to figure out where you’re going to try to sell it.”

The customer journey is also especially fertile grounds for wide-scale digitization. Consumers increasingly expect much or all of their interaction with businesses to be conducted online. Companies can sometimes struggle to meet this expectation.

A robust web page or purpose-made app does not constitute a true digital transformation if it impedes the free and autonomous use of a company’s customer-support services. Too often, digital elements of the customer experience simply overlay a series of human interventions, whether those involve direct interaction between customers and company representatives or back-end activities which go unseen by consumers but which interrupt their journeys.

Measuring the extent and impact of digitization efforts affecting the customer experience can help companies identify and resolve such bottlenecks. This goal can be easily frustrated if we consider the customer journey as a monolithic entity.

To focus our model on easily actionable legs of that journey, we draw on a concept introduced by Bain & Co.: the episode.

Each point of contact between customers and businesses, whether that contact is personal or virtual, manually undertaken or digitally automated, constitutes an episode. Most episodes belong to one of three categories: exploration, usage, and service. When you shop around before deciding on a purchase, you undertake an episode. Acting on your decision and completing your purchase represents another episode, and inquiring about its delivery yet another.

THE IMPACT OF DIGITIZATION ON EPISODES

Digital transformation can affect episodes in a number of ways. GP Franzoni identifies three main areas in which digitization can improve customer-experience episodes:

- Improved execution speed
- Improved execution control
- More firmly established customer expectations

Execution speed is improved largely by eliminating or rendering optional those elements of a given episode that do not contribute directly to the customer's objectives. In large part, this amounts to reducing the number of direct interactions between customers and company staff. It can also be achieved by optimizing web- or app-based processes. Some banks allow you to open a new account online over the course of 24 interactions; others require more than 100.

Execution control is often improved by enhancing traceability. When customers are able to quickly answer their own questions—about a delivery's location, for example, or about the use of a product in an unfamiliar context—they feel more fully supported by the company itself.

Digitization can greatly increase the number of points at which expectations can be established and underscored. Unless a company establishes customer expectations with care, those expectations may be poorly informed, unjustified, infeasible, or unproductive to meet. In such cases, the company may have only itself to blame: customer expectations are set by companies themselves, explicitly and implicitly, throughout the customer journey.

Shaping those expectations becomes crucial to the achievement of a mutually beneficial outcome for customers and businesses. For companies, setting expectations is integral to the crucial work of defining its target customers. For consumers, it is an important component of the value they perceive as being conveyed by a given brand.

Companies that set high expectations for their customers and consistently fulfill those expectations benefit both from increased customer loyalty and from a stronger, more fully ratified understanding of their target customers.

OUR MEASUREMENT MODEL

As Peter Drucker once observed, “if you can’t measure it, you can’t manage it.” Simply digitizing an operational process or episode in the customer journey is not enough to guarantee the promises of digital transformation. To be truly effective, digital transformation efforts must be guided by consistent metrics and their efficacy confirmed by KPIs.

In this section, we describe the frameworks we consulted while developing our model. We then present a series of formulas designed to measure an episode’s state of digitization relative to a company’s overall digital-transformation goals, the success of that digitization initiative in optimizing customers’ experience of that episode, and the perceived value of digitization by customers themselves.

Our model takes broad guidance from the OECD’s 2019 list of country-level objectives for measuring digital transformation. These include:

1. Make the digital transformation visible within the existing reports
2. Understand the economic impact of business transformation
3. Encourage the measurement of digital transformation from customer point of view and customer experience
4. Design new and interdisciplinary approaches to data collection
5. Monitor technologies underpinning the digital transformation

These objectives provide a helpful framework, but are not directly applicable to the challenge of digitizing episodes that form the customer experience. To make the OECD framework relevant to digital transformation on the company level, we first identified three dimensions of episode digitization that we sought to measure:

- **Client-side digitization of the customer experience episode.**

Does the customer need to interact with the company’s staff to complete the episode, or can the customer complete this episode in complete autonomy?

- **Company-side digitization of the customer experience episode.**

Can the episode be completed without human intervention on the company side, even if such human intervention does not directly involve the customer?

- **Customer satisfaction.**

Does full or partial digitization of the episode save customers time? Does it make the episode easier to engage and complete than it had been before digitization?



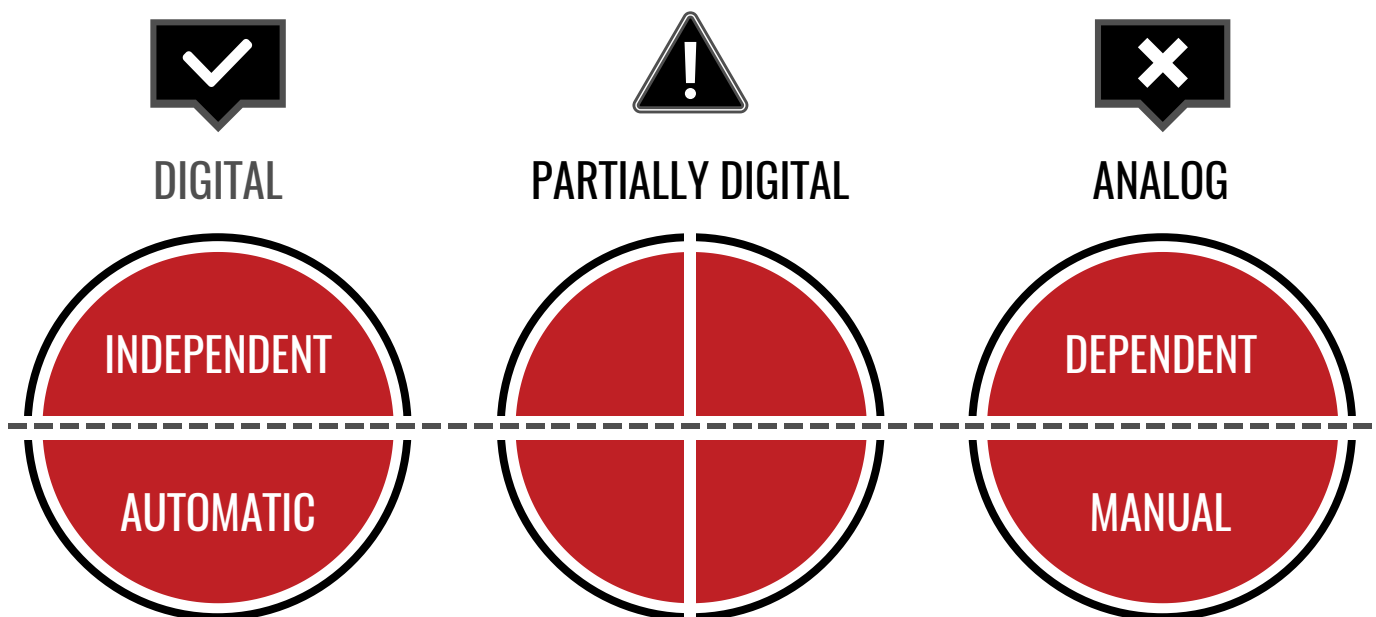
OUR MEASUREMENT MODEL (cont' d)

These dimensions translate into three specific measurements, each representing a different point of view:

1. An objective measurement of the front-end experience: can the client perform the episode completely autonomously?
2. An objective measurement of back-end processes: will the customer be able to perform the operation without human intervention by company staff?

3. A subjective measurement of the customer's personal experience, involving the customer's rating of the episode on the five-point Likert scale and a free comment on the customer's experience of the episode.

This amounts to measuring the degree to which the episode has been automated both on the customer-facing side and within the company's internal operations, as illustrated in this diagram:



This figure helps illustrate the factors we hope to measure. Episodes may be measured from the customer's perspective or the company's; digitization describes the extent to which the customer is able to complete the episode independently or the company to fulfill the

customer's requirements without human intervention. We call these perspectives the customer-facing episode and the back-end episode, respectively.

OUR MEASUREMENT MODEL (cont' d)

We can express each of these measurements as a variable. For our purposes, we refer to the independence of the customer-facing episode as (ie) and the autonomy of the back-end episode as (ae).

We use these variables in a simple mathematical model that describes the state of an episode's digital

transformation with respect to the entire range of episodes considered by a given company for digital transformation. This formula produces two KPIs: a Digital Transformation Index and a Digital Customer Frustration Index. The ideal Digital Transformation Index score is 1, while the ideal Digital Customer Frustration Index is 0.

$$DTI = \frac{\sum ie + \sum ae}{2}$$

$$CFI = 1 - DTI$$

Where

E = Number of Total Episodes, define as:

$$E = \frac{\sum ie + \sum de + \sum ae + \sum me}{2}$$

$\sum ie$ = total number of independent episodes (customer side)

$\sum de$ = total number of dependent episodes (customer side)

$\sum ae$ = total number of automated episodes (company side)

$\sum me$ = total number of manual episodes (company side)

OUR MEASUREMENT MODEL (cont' d)

These formulas address two of the three factors we seek to measure. The third, customer satisfaction, draws on qualitative data in the form of customer ratings of and comments on each episode. We found it useful to express the results of this customer-generated data in terms identified by the Technology Acceptance Model proposed by Fred Davis in 1986: perceived usefulness (PU) and perceived ease of use (PEOU).

For each episode (e), and for each customer-facing episode (cfe), we generate an evaluation that allows us to measure the episode strictly in terms of customer satisfaction. The following formula produces this measurement. Since customer perception was originally measured on a five-point Likert ladder, the ideal score for each index is 5.

$$DPUI = \frac{\sum PEOU}{E}$$

$$DPEUI = \frac{\sum PU}{E}$$

The average of these two measures provides a Digital Customer Experience Index:

$$\text{Digital Customer Experience Index} = \frac{DPUI + DPEUI}{2}$$

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We applied this method to a hypothetical company whose customer experience is broken into an array of eight episodes, grouped into four discrete

customer journeys. For the eight episodes, we provide data informing ie, ae, PEOU, and PU, as shown below.

DIGITAL EPISODES

id	journey	episode	ie	ae	peou	pu
1	Usage	Pay with Credit Card	1	1	4.31	4.73
2	Purchase	Order on Website	1	1	4.11	4.34
3	Service	Change my Address	0	0	2.43	1.7
4	Usage	Upgrade my Subscription	1	0	3.37	3.11
5	Service	Cancel my Subscription	0	0	1.43	1.46
6	Exploration	Product Info Web Page	1	1	3.96	4.01
7	Purchase	Received Order	1	1	3.85	4.09
8	Purchase	Track Order	0	0	1.21	1.33

This information produces the following measures:

	E =	8	GOAL
Digital Transformation Index =		0.5625	1
Customer Frustration Index =		0.4375	0
Digital Perceived Usefulness Index =		3.08	5
Digital Perceived Ease of Use Index =		3.1	5
Digital Customer Experience Index =		3.09	5



APPLICATION: MEASURING DIGITAL TRANSFORMATION (cont' d)

Measurement data can also be aggregated within specific customer journeys to measure the extent and success of digitization in each.

DIGITAL CUSTOMER JOURNEY VALUES

id	journey	E	ie	ae	peou	pu
1	EXPLORATION	1	1	1	3.96	4.01
2	PURCHASE	3	2	2	3.06	3.25
3	USAGE	2	2	1	3.84	3.92
4	SERVICE	2	0	0	1.93	1.58

We may now calculate the KPIs discussed above. A digital transformation that appeared from a bird's-eye view to be somewhat half-complete (and its effect on customer satisfaction mediocre) is now

revealed to have produced outstanding results for some customer journeys, with significant work remaining to be done on others.

id	journey	E	dti	cfi	dpui	dpeui
1	EXPLORATION	1	1.00	0.00	3.96	4.01
2	PURCHASE	3	0.67	0.33	3.06	3.25
3	USAGE	2	0.75	0.25	3.84	3.92
4	SERVICE	2	0.00	1.00	1.93	1.58

CONCLUSION

The model proposed in this study allows us to measure both the perceived customer experience and the efficiency of a company's efforts to digitize the customer journey. Using existing measurement models, it is possible to offer an accurate, reliable, and actionable measurement from three different points of view:

- The customer's perception of the digital customer journey, using the TAM reference model and focusing on the perception of utility and ease of use
- The extent to which each customer-experience episode's front end has been digitized; i.e. how the front end has been digitized with respect to the customer journey
- The extent to which back-end processes have been digitized, measuring in particular whether the front-end digital experience is supported by the company's broader ecosystem

The results show us that digital transformation is reinventing the customer experience while making the customer journey simple and fluid, and facilitating interaction with brands through certain essential elements such as the ergonomics of websites and mobile apps and the company's overall degree of responsiveness to express and implied customer demands.

We recommend the proposed model as a system for measuring the impact of digitization on the customer experience. It measures a company's digitization efforts in terms of highly actionable KPIs while offering both quantitative and qualitative bases for improving digitization management.

ABOUT THE AUTHORS

Gian Paolo Franzoni

Gian Paolo Franzoni is a telecom executive who currently serves as Head of Customer Experience Management at Etisalat in Dubai. His previous work includes roles as Etisalat's Head of Business Transformation and as a Senior Solution Architect at Ericsson.

Since taking his degree in Management and Production Engineering from Politecnico di Milano, Mr. Franzoni has pursued a career that encompasses customer experience leadership, digital transformation, process automation, stakeholder relations, and vendor management. He specializes in enterprise-wide efficiency projects.

Federico Cesconi

Federico Cesconi is the Founder and CEO of SANDSIV, a leading customer experience management company. Before founding SANDSIV, Mr. Cesconi rose through the ranks at Switzerland's Cablecom GmbH. A successful four years as Cablecom's Head of Customer Information Management led Mr. Cesconi to be named Head of Analytical CRM and Director of Customer Insights & Retention and finally the company's Director of Business Intelligence. An avid cyclist, he began his professional career with bicycle pioneers Ritchey Design in San Francisco.

While at Cablecom, Mr. Cesconi earned an MBA in Business Administration from the University of Wales, building on the Doctorate of Law awarded to him by the Università degli Studi di Milano.

With SANDSIV, Mr. Cesconi has brought AI-driven customer experience solutions to customers including Lufthansa, Axa Group, Emirates Airlines, and Sky Group.



ABOUT SANDSIV

SANDSIV is a Swiss software provider located in Technopark Zurich, Switzerland's main technology hub. Listed as a leading VOC vendor in Gartner's recent VOC Market report, SANDSIV has built its reputation in delivering its state-of-the-art Voice of the Customer enterprise solutions "sandsiv+" to advanced CX teams at leading organizations throughout EMEA, including leading companies in the telco, financial services, utilities, retail and transportation sectors.

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ABOUT sandsiv+

sandsiv+ captures, analyses, integrates, improves, and measures the customer experience. Introduced in 2014, the next-generation CX platform harmonizes data from any direct or indirect channel, and generates inferred data using artificial intelligence. Its analytical features are built on advanced AI technologies including Natural Language Processing (NLP) and Deep Machine Learning, providing for the increasingly unsupervised production of faster and more accurate actionable insights, and allowing organizations to act responsively and plan wisely. The platform supports complex integration, customization and configuration.



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