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Moments of Truth - How Rupturing Events Uncover the Value Impacts of Technology

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Abstract Moments of Truth are the powerful, but also unsettling events through which companies are confronted with the ethical implications and value effects of their technologies. In this article we explain why companies are well advised to monitor Moments of Truth as a systematic part of product management. We explain how they have become both a source and catalyst of ruptures for tech companies' operations. To properly understand the scale and importance of Moments of Truth, we draw on philosopher Alain Badiou's event theory to define them. We show how they are unpredictable, yet expectable in their appearance and systematically reveal a material value truth that fundamentally alters customer behavior, industry dynamics and often even society at large.

Keywords

Technology Impacts, Moment of Truth, Event, Societal Change, Digital Ethics

1. Introduction

Digitalization causes deep ruptures in the way we live and work. Ruptures, so profound and multifaceted that many scholars view humanity in the process of entering a new era of historical development (Brynjolfsson/McAfee 2014; Floridi 2014). This process of change requires great care and attention. Companies, governments and technology providers want the transition to be a good one for humanity and defend a role for themselves in the newly emerging digital ecosystems.

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Therefore, they must carefully observe and react to the positive and negative value implications that accompany the digital transition, not only in terms of financial value, but ethical value. In this article, we argue that a way for companies to keep track of the human, social and corporate value changes happening around them is to pay attention to those moments where values transition. We call these points of value transition “Moments of Truth” (short “MoTs”). Generally, MoTs are unexpected events that are so fundamental for the understanding of our environment that they are lasting change-makers for the way we think and act. MoTs can happen at all levels of society. At a global political level an example is September 11th. The world trade center attack has profoundly altered international politics, trade relations and the way digital infrastructure evolved. The values of privacy and liberty eroded in its aftermath. Another example is Greta Thunberg’s protest in front of the Swedish parliament. The event was disruptive and initiated drastic changes of the way companies and regulators now pursue their ecological efforts. The value of ecological preservation has been strengthened since.

In this article, we focus on the nature, role and importance of MoTs caused specifically by technology and altering the way technology-driven companies are seen by their customers as well as by regulators. Two running examples accompany this article. Facebook’s Cambridge Analytica scandal is what we call a “*global MoT*” with broad impact on the company as well as the industry in which it operates. A whistleblower testimony revealed how massive amounts of personal data from Facebook were obtained by the political consultancy Cambridge Analytica and utilized for personalized, manipulative political advertisements during the 2016 US election (Solon 2018). The Cambridge Analytica scandal marked a turning point for Facebook’s long-admired story of success and growth. A spotlight was put on the value of privacy and how it is breached as well as on the value of free decision-making and how it can be undermined by social networks. The consequences of this MoT range from altered customer attitudes and behaviors towards the company to political decisions impacting the company in the long term. In fact, in the aftermath of this MoT, the whole tech industry has been forced to confront the ethical challenges of its data-driven business models more seriously.

The second example for a MoT is the story of Danielle whose Alexa voice assistant unnoticeably recorded a private conversation between her and her husband and sent it to a random person of the couple’s contact list. The technology’s unexpected behavior caused a dramatic turning point in the trust the customer put in the technology and the company providing it (Horcher 2018). Danielle’s

story illustrates what we call a “*local MoT*”, which does not lead to immediate large scale societal shifts and public outrage, but still causes a disruption for companies who see the subjective realities of their customers fundamentally changed. If the local MoT is not limited to one customer, but many of them, then their effects add up and together they are similarly impactful as global MoTs are.

What both examples have in common is that they unveil a dormant conflict between values implicitly ascribed to technology by people and the values that are truly born by the technology. If people’s value expectations diverge from technologies’ reality, then MoTs are the events that bring this truth to the forefront. The conflict becomes visible – mostly at a completely unexpected moment - and marks a turning point in the customer-company relationship. Moreover, MoTs strengthen a new truth, held high by the people affected, many of whom demand explanation, accountability and change for the better.

Seen that digitalization systematically causes MoTs, we believe that tech-driven companies should better understand the phenomenon. MoTs teach companies how their technology diverges from their customers’ value expectations and how it *should* be built to better align with these. They also educate companies about technology’s general flaws and errors, imprecisions and programmed prejudices. Moreover: When a technology fundamentally undermines values held dearly by customers, the consequences are significant. They range from reputational damage to revenue declines, loss of customer- and investor confidence, to scrutiny from consumer protection agencies, etc. The implications of the Cambridge Analytica scandal have been (and are still) grave for Facebook as is the disappointment of many Amazon Alexa users who share in Danielle’s or similar experiences with that technology (Goernemann/Spiekermann 2020).

Even if MoTs are not predictable (as we will show below) awareness of their existence and anticipation of their potential appearance in an industry or corporate context may help companies to be better prepared for them. Posthoc MoT analysis is a further opportunity: the shock MoTs cause for companies and their executives allows them to morally grow and develop a stronger societal responsibility. For competitors that are only indirectly impacted by a MoT, it is beneficial to study their value implications for the industry. They can use the knowledge about the unveiled values to their competitive advantage, developing products and business models that cater to the revealed value-related truth. A likely example of a company doing this is Apple. The company

responded to the Snowden revelations as well as the Cambridge Analytica scandal with an outspoken privacy strategy for its products and services (Isaac/Nicas 2021).

To make the MoT phenomenon accessible for company's value strategies our article is structured as follows: We will first review how the MoT terminology is already used by some of the tech-industries leading companies. We show however, that the current corporate understanding of MoTs is based on a limited theoretical foundation. In particular, it is the underlying understanding of *truth*, which causes a problematic conceptual confusion that we aim to resolve in our article. Second, we define MoTs and substantiate their core elements using the philosophical theory of events. Third, we focus on individual reactions to MoTs and their relevance to corporations involved. Finally, we explain the unique role technology plays in the MoT phenomenon.

2. Current usage of the MoT terminology in marketing practice

The expression “Moment of Truth” was first coined in the 1980s by Jan Carlzon, the former chief executive of Scandinavian Airlines (Carlzon 1987). In his view, every contact point between a consumer and a company bears the potential to be decisive for how the customer perceives a brand and its products. His idea was to identify these decisive situations for the customer-company relationship (MOTs) and to use them strategically to shape the consumption experience. In this view, MOTs are key events that mark many different situations in the customer journey; for example, when a customer stands before the shelf in the supermarket and takes a decision between alternative products (Procter & Gamble 2006). Marketing practitioners identify and use these moments to “win the customers” and influence their purchase decisions, brand loyalty and recommendation behavior (Löfgren 2005; Moran et al. 2014; Lafley/Charan 2008). A tech company said to work with the concept is Amazon.

Another tech company working with MoTs is Google, which coined the term “zero moment of truth” or “ZMOT” (Lecinsky 2011). A ZMOT is “the precise moment when [people] have a need, intent or question they want answered online” (Goldman, 2014). The “zero” in this phrase points to the initial phase of a consumer's online search on Google, which occurs before the first real interaction between a target company and this consumer. Google uses the concept to praise its power to shape consumers' perceptions when they search products, consult online reviews and compare prices (Lecinsky 2011). Google argues that if a company addresses a consumer at that

ZMOT where he or she is most receptive to a particular message, chances are high to influence their behavior in a desired direction (Google 2021). So ZMOTs are about manipulating the present in order to control the future. ZMOT serve to change the future in a predicted way; a desire rooting deeply in Silicon Valley culture.

Taking a step back, we realize though that Carlzon's marketing-related MOTs and Google's ZMOTs are conceptually not comparable to the kind of fundamental events we described as examples above. Even though companies' MOTs and ZMOTs similarly refer to decisive incidents that can happen to a consumer, they look at them as a) re-occurring situations in the customer journey with b) predictable behavioral outcomes; outcomes that c) can be shaped or controlled. In contrast, the kind of MoT we want to establish here are moments that never re-occur in the same way, can hardly be predicted and also cannot be fully controlled in the aftermath except for a wise dealing with them.

3. Defining Moments of Truth

One core reason why Google and other Marketing executives have such a different idea of MoTs or ZMOTs than we have is that they seem to have a different conception of what constitutes *relevant truth*.

This may be due to the fateful distinction 17th century scholasticism introduced between formal truth on one side and material truth on the other (Apel/Ludz 2013). A *formal truth* is the correspondence of a statement to the actual state of affairs according to general rules of logic. Truth in this sense is veracity, the contrary of which is the erroneous (Badiou 2005). The truth considered in Google ZMOTs is of this kind. The criterion for truth is that someone searched for something or that an event has occurred. For example "Peter googled for 'God'". Corresponding to this formal truth, the search engine may place specific advertisements next to the search results, such as a bible ad. However, Google has no access to the higher *material truth* of Peters intentions. The search engine does not know whether "Peter searched for God" with a spiritual or religious concern in mind or whether he just wanted to look up the spelling of God with a "d" or a "t". *Material truth* is, however, interested in exactly this kind of concern, which we believe is the more important thing to know about: *why* something happened and not only *that* something formally happened.

Material truth is the result of a process, in which humans recognize elemental relationships and universal characteristics of the world around them (Breisach 1687). Values are such universal characteristics because they provide orientation in humans' striving for sense and meaning (Scheler 1921 (1973)). The moral values we hold give us reasons for specific behavioral responses (van de Poel/Kroes 2014). And a "moment" for such a higher material truth to emerge is not just any point in a customer journey, but it is a decisive event, as the root of the word "moment" actually signals. "Moment" stems from the Latin word *movimentum*, which is a composition of *movere* ("move", "set in motion") and *-mentum*, a suffix used to signal a tool or a means to an end (Stowasser et al. 2006). Seen these two dimension, the word moment implies some decisive influence able to set something in motion (Georges 2016). "Moments" are hence interrupters of the ordinary flow. They evoke an inner force to move.

This conception of moment that we embrace here resonates with the event theory of French philosopher Alain Badiou as he described it in his works "Being and Event" (Badiou 2005) and "Logics of worlds" (Badiou 2013). Badiou regards "events" as metaphysical *ruptures*. An event is a radical break from present existence, which brings an idea (such as a relevant value) to the forefront that cannot be accommodated easily with the existing ideological norm (Badiou 2005). Events represent "an immanent break" with the past because they render a *new truth* discernible that was not accessible prior to the event (Badiou/Hallward 2001). In its very essence, the event creates space to rethink reality and allows for something new to emerge. It radically changes the choice of arguments in a situation because it alters the distinction of what is relevant and what is irrelevant. The truth that emerges through an event can alter existing beliefs and declare "that another world is possible" (Robinson 2014).

The Cambridge Analytica scandal did just that. One evening, Christopher Wylie went public with his revelations in the Guardian newspaper and described the role Facebook had played in providing access to personal data of 87 million platform users without their consent (Cadwalladr/Graham-Harrison 2018). He laid out Cambridge Analytica's efforts to influence the election results with microtargeted advertisements that exploited users' individual personality patterns and character weaknesses. This event was the impetus for a process in which a *new material truth* became discernible. It lead to a clearer view on what is valuable and worthy of protection in a democracy: the free will, autonomous opinion formation, freedom from surveillance, and transparent and fair business practices. The event was the impetus for a movement of reconsideration. It inspired users

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to rethink their role in the digital ecosystem and forced tech companies to reconsider their business practice and ethics. 54% of US Facebook users adjusted their privacy settings, 42% paused using Facebook for at least several weeks and 26% deleted the Facebook App (Pew Research Center 2018).

At first sight, our local MoT - Danielle's awakening on her voice assistant - appears smaller in scope than what Badiou may call an event. Yet, it does carry the key event characteristics. Danielle acknowledged a *new truth* about her voice assistant, about this genre of technology, possibly even about technology in general. The machine sharing her data pro-actively and against her will was an unexpected incident that caused a *rupture* in her value expectations. The MoT let her wake up on the idea that digital devices are not only benevolent and convenient. In contrast, here discreet, helpful assistant suddenly turned into a insidious spy device, undermining her privacy and trust. Also, the woman's understanding of the values she had ascribed to herself seem to have been transformed: from a tech-savvy smart home controller to a powerless object of arbitrary surveillance.

Taking together the two elements of MoTs, described so far the first part of our definition is that a Moment of Truth is a *rupturing* event through which a *new, material value-related truth* emerges.

4. Further defining characteristics marking Moments of Truth

Drawing from Badiou's work, we can derive some additional characteristics of MoTs that help to further refine the definition and allow to deduce some recommendations for companies influenced by technological change and disruption: MoTs appear *unpredictably* in the context of a historically unique *situation*. A MoT can only be identified in *retrospect* because it is essentially an impetus that compels individuals to *consciously position* themselves vis-à-vis an emerging truth.

4.1. The unpredictable yet expectable nature of MoTs

According to Badiou, events render visible a truth that breaks with an existing order. He argues that events are therefore by nature *unpredictable*. They are not just simple effects of the existing order but rupture with that order (Lecerle 1999). This implies that neither the event itself nor its consequences can be reliably predicted from the pattern of activities that existed prior to the event.

The Cambridge Analytica case was indeed unpredictable, in particular regarding the vehemence it saw in public discourse. Many industry players believed that *the norm* of trading personal data on personal data markets would be an established practice. The CEO of Cambridge Analytica Alexander Nix spoke publicly and without any remorse about the role of social network campaigns in manipulating voters (Nix 2016). Only experts – the academic world and NGOs – discussed the ethical concerns associated with the data ecosystem and social networks’ problematic role in manipulating users’ and voters’ free decision making (Spiekermann et al. 2015). Privacy concerns over data collection were also long reported (Fujitsu 2010). Therefore, Facebook itself knew very well about the problematic value conflicts that were boiling under the surface of its platform operations. Yet, it also witnessed that for the vast majority of its users and politicians, this truth was not visible, present or relevant. Consequently, the company was taken by surprise when the “Wiley bomb” detonated. That it would detonate and when this would happen was unpredictable. Yet the truth it unveiled was long dormant and its revelation therefore to some extent also expectable. The company could have prepared for it much earlier if it had wanted to. It could have limited automatic and extensive data collection through its APIs, it could have chosen its partner networks more carefully, it could have banned political campaigning from its platform, yet it did not do so. Hence, the MoT had a possibility to unfold.

4.2. The historically unique context of MoTs – When is the time ripe for MoTs?

Badiou argues that an event emerges in a unique situation, a singular “ensemble of bodies and languages” at a specific place and time (Badiou 2005). It is only this unique, *historical* setting, which allows the truth to emerge.

Wiley’s testimony appears to have emerged in such a historically unique setting. In early 2018, the US had lived through the presidential election of Donald Trump, who was perceived by many players as much more polarizing and controversial than his predecessor Barack Obama. Obama’s campaign team is known to have pioneered the massive use of social network campaigning. So why did the blame of this same practice hit so much harder after Trump was elected? It seems like historical events of this scale are marked by multiple external forces falling into place in parallel. At the time when the Cambridge Analytica revelations came about, first information of Russian election interference on Facebook had also been publicized. Large tech companies, particularly the

GAFA (Google, Amazon, Facebook, and Apple) had received harsh criticism for their overwhelming market dominance. And then there is the truth-bringer him or herself that may need to be of a certain kind in order for the MoT to take momentum. A unique voice and authentic appearance of a person just like Christopher Wiley seems to have been needed as a truth bringer. The core take-away here is that MoTs can be likened to the staging of an opera: everything needs to be in place at the right time and in the right tonality with the right actors; only that for MoTs, these elements are uncontrollable and unpredictable. The MoT is the vanishing point towards which everything is directed.

But are MoTs then really unpredictable? Perhaps yes if one treats corporate prediction practices as a statistical exercise. But this need not be so. Product design is for a long time inspired by investigating the grand undercurrents of a time to understand what consumers like; from colors to cuts. Yet, this creative foresight, market and culture observation is rarely used so far to understand what consumers fear and how their ethical value expectations shift. Companies may be well advised to have an eye on observing these in order to understand the undercurrents driving or prohibiting the adoption of their digital products and services as well as potential dramatic disillusionment at a specific point in time.

4.3. MoTs and Events are not only negative

At this point it becomes important to stress that MoT are not necessarily negative. From a value-ethical perspective, truth is generally seen positive as opposed to untruth. It opens and clarifies peoples' perspective for that which really is: "Truth is the objective agreement of thought, or conviction, with the existing situation" (Hartmann 1932 (2002)). Consequently, MoTs are worthwhile and positive in retrospect, even if the moment in which they occur may not be pleasant. In this sense, we consider MoTs to be an inherently positive process impetus to reconsider ethical choices. In the Cambridge Analytica scandal, unpleasant as it was, the positive new truth that emerged may well be that an "information civilization" (Zuboff 2015), free of surveillance and manipulation, is worth striving for.

However, also the immediate experience of a MoT does not necessarily need to be negative. When it comes to technology, MoTs can arise when a new technology literally disrupts a market in Clay Christensen's understanding of the term (Christensen et al. 2015). At specific, unpredictable points in time, technology suddenly gets a performance boost that is so dramatic that it immediately

captures the enthusiasm of a larger consumer market and takes it by storm. Historic examples are the printing press, the appearance of the mobile phone, the web browser. Soon perhaps an AI technology like GPT3 could boost speech assistant users' enthusiasm for the degree of humanness their home assistants suddenly display. Values like progressiveness would get a boost in the aftermath of this (now still fictitious) event. While it is difficult to predict the historical setting for such a technology-induced positive event, future disruption by technology is nevertheless expectable. To be prepared for the vanishing point of a truly disruptive technology, companies need to closely study the limits and breakthroughs of technological capability as well as the installed base and existing habits in the market (Rogers 2003).

4.4. The retrospect recognition of MoTs

How important or dramatic a MoT really is or will be can only be grasped once it has happened. To Badiou, an event is in fact only to be characterized as such *retrospectively*. It is defined by the scope of its unique consequence - its capacity to make a latent truth appear and stay in the world (Bensaïd 2012). Since an event is "to be interpreted on the basis of the traces it leaves behind" (Badiou 2005, p.191) it can only be acknowledged in the aftermath, when its traces become visible in the way people react to it. Only if people acknowledge that new truth and consciously position themselves toward it the event or the MoT becomes what it is.

Looking at the Cambridge Analytica scandal in retrospect, it becomes clear how much impetus it actually created. Two months after Wiley's testimony, a survey found that 87% of respondents had heard of the Cambridge Analytica scandal and 39% had lost trust in Facebook (PwC 2018). The Cambridge Analytica scandal "riveted the world's attention on Facebook in a new way, offering a window for bold change" (Zuboff 2021).

Also Danielle's voice assistant case marked an impetus for her to react, contacting the media within days and sharing her experience with millions of people. "I felt invaded. A total privacy invasion. I'm never plugging that device in again, because I can't trust it" (Horcher 2018). Danielle's going public is not only a sign of acting upon that newly learned truth it also shows how quickly a local MoT can spread and gain relevance on the public stage.

5. Reactions to Moments of Truth

As MoTs dramatically expose and render discernible a material truth, they compel people to position themselves towards it. A significant portion of Badiou's philosophical work on events addresses people's reactions to events that allows us to understand the dynamics likely to happen after a MoT. When confronted with an event, people are compelled to decide what role they allow it to play in their lives. This choice is part of a process Badiou calls "subjectivation": The person becomes part of a subject. "Subject", in the way Badiou uses the term, is not an individual subject but a group of people who share a common view about the event and its meaning. He introduced three distinct types of subjective choice: the faithful, the reactive and the obscure subject (Badiou 2013). To facilitate matters, these subjective choices will hereafter be referred to as fidelity, persistence and resistance.

5.1. Fidelity from the faithful subject

One type of reaction to new truths can be observed in individuals who decide to embrace the encountered truth and to loyally act upon it. Fidelity is what "renders the indiscernible immanent" (Badiou 2005, p.342). In Badiou's theory, it is hence the loyal subject that confirms the event, proclaims the new truth and thereby supports the rise of a new reality, pre-emptively announcing that the future will be different. The loyal reaction type is present among individuals who acknowledge that a technology threatened moral values they held dearly and demand change. A moment can only be an impetus that triggers a process of recognition, if there are individuals who accept to be "set in motion". Fidelity was observable in user reactions after the Cambridge Analytica moment became public: User activity on the platform decreased by 20% in the year after the crisis (Hern 2019) and Facebook's popularity as an employer plummeted among University graduates (Sweney 2019). We interpret the growing public discourse about Facebook's responsibilities regarding digital privacy rights and regulations as a sign of fidelity towards the truth the Cambridge Analytica rendered discernible. The same goes for Danielle if she not only claimed that she'll never plug the device in again, but really never did so.

5.2. Persistence from the reactive subjects

In contrast to fidelity, Badiou describes indifference as an "invention of conservatism" (Badiou 2011, p.92). The persistent subject refuses loyalty to the new truth out of fear of radical change. "Reactive subjects", as Badiou calls them, seek continuity (Badiou 2011). Their notably persistent

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response does not attempt to fight against the new truth, yet, it resists the event's consequences and "maintains that the previous world can and should go on as it is" (Badiou 2011, p.94). Individuals who react with persistence may be willing to accept reforms or regulations following the event. But their personal goal is to preserve existing power structures. When it comes to Cambridge Analytica persistent reactive forces play an important role. The economic players who benefit from the exploitation of personal data and seek to maintain their source of income try (as far as possible) to continue acting as if nothing happened. To this date the structures of the digital business models and social networks' role in these still enable political manipulation at massive scale in countries and regions where Western media attention is less prominent (Carrie 2021).

Persistence is, however, not only a phenomenon at the organization level. At the individual level, many social network users may equally conserve the status quo by retaining their usage habits. A survey of US consumers found that large parts of social media users had a negative opinion on Facebook after the scandal. Yet, the majority continued to use the platform as much as they had before (Herhold 2019). In Badiou's theory, the persistent subject believes it cannot control the situation and helplessly gives up on the acknowledged truth. This appears to be present regarding many users confronted with digital privacy issues, particularly in social networks (Sides et al. 2019; Pew Research Center 2019).

Against this background, companies should carefully observe their customer base after an event that is likely to be a global MoT. They should be careful to not confound the ongoing presence of the persistent subject on their platform (or using their technology) with an apparent irrelevance of the MoT. The fact that a market continues to exist for some time or that people do not easily alter their habits does not mean that the MoT did not happen. Badiou argues wisely that only history will tell and acknowledge which incidents really constitute "events" in his understanding of the term. For an economic context, we would argue that when it comes to MoTs, global MoTs like Cambridge Analytica may set the scene for smaller local MoTs. They make value preferences, shifts and transitions visible. It is likely, that a privacy breach from a voice assistant leads to outraged reactions when it occurs before the background of a wide-reaching privacy scandal in a different area. A local incident like the voice assistant's malfunction may then lead to the sudden realization of what the Cambridge Analytica case, which was ignored at the time it happened, was

actually all about. These potential dynamics illustrate how a global MoT may have helped to set the stage for subsequent local MoTs.

5.3. Resistance from the obscure subject

The third kind of observable event reaction is one of radical resistance against the event and its consequences. Badiou describes the central elements of this reaction kind as a refusal to change and a willingness to neglect the new truth and eliminate the loyal subject. In their opposition of the event, resistant individuals regularly refer to some totalizing dogma as a fictive counterpart to the new truth (Badiou et al. 2010). Totalizing dogmas are ideas that claim universal and timeless validity, such as ideas of God, Race, Nation or Fate (Phelps 2013). Resisting a MoT means to neglect the truth it unveiled and to oppose those who are loyal to it with an alternative and mostly obscure or totalizing counter-belief.

Investigating the Cambridge Analytica case, there is indeed a dogmatic justification, which is in favor of the exploitation of personal data and which continues to propagate the need to network everyone in an unrestricted manner at all times: This is the ideology of *trans- and posthumanism*. Transhumanism is the dogmatic idea of an ethical imperative for progress, human enhancement and betterment (Vita-More 2020) that can only be achieved through the use of technology and data for better decision making as well as human networking. Proponents of transhumanism envision a future in which humans mature to become controllers of nature and of their own evolutionary progress (Tirosh-Samuels/ Mossman 2012). Posthumanists go even further and foresee that an autonomous, artificially enhanced species will compete with and inevitably supersede homo-sapiens as a logical next step of evolution (Bostrom 2005; Kurzweil 2005). Any social norms, laws or values, such as privacy or the right to be let alone, run counter to the transhumanist agenda of networked progress and could hence be interpreted as “attempts to prohibit human enhancement” (Marchant/López 2012). Transhumanism can be interpreted as a totalizing dogma in Badiou’s sense, because it essentially disparages any call for limitations on technology as counterproductive. It is hardly surprising that transhumanism and posthumanism have therefore been compared to 20th century totalitarianisms (Precht 2020, p. 83).

From a transhumanist perspective, a reaction to the Cambridge Analytica scandal or to the privacy breach of a voice assistant may consist of obscure justifications for the technology failure. If

Danielle interpreted her experience from a transhumanist point of view, she might judge her voice assistants' behavior as a typical "AI-child" mistake. She might see her Alexa device as a nascent technology that she must educate and care for in order to be part of a larger story of progress – a responsibility that weighs more than her privacy. The privacy breach becomes justifiable with the obscure arguments that consumer technology has the right to be marketed with massive software flaws and that value breaches can be tested out upon customers since the damages caused by them are no more than a necessary collateral damage in the pursuit of natural evolution of progress.

Figure 1 summarizes all key elements of the MoT phenomenon, which we have outlined so far.

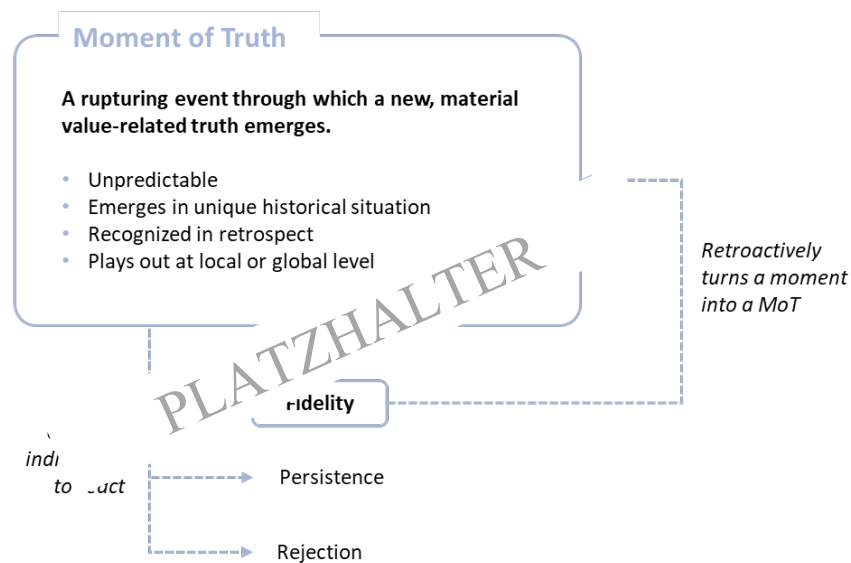


Figure 1: Key elements of the MoT phenomenon

6. The practical relevance of MoTs

The attributes of MoTs we defined represent significant extensions to the existing understanding of MOTs in consumer marketing. The first and most important difference is the interpretation of truth on the level of meaning instead of veracity. This difference is key, because it allows us to interpret MoTs as revelatory events for value implications of technology. MoTs allow to shift the focus to meaning beyond formality. When we look at MoTs through this lense, they allow companies to understand in depth how digital technology shapes various areas of life through positive or negative value implications that often come unexpected to users and developers alike.

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A company can draw valuable insights from the reactions to a MoT because they point to the underlying meaning level of technological impacts as perceived by consumers. As values are experienced emotionally, emotional reactions are seen as an opportunity to understand technological value impacts (Desmet/Roeser 2015). Hence, emotional reactions to MoTs open up a window of opportunity to identify the actual value implications of technology. This perspective on technologically induced value implications can help companies to strengthen the positive impacts of their technology while reducing negative side effects. MoTs provide us with information that helps to recognize important ethical challenges and to develop technology that sustainably respects users' moral values.

Our concept of MoTs is applicable to individual, local MoTs as well as to collectively experienced global MoTs. In both contexts, MoTs can have drastic consequences for the companies involved and are therefore worth their consideration. MoTs trigger strong responses and understanding these responses is relevant from a technical, economical and societal perspective. Identifying what is behind a local MoT experienced by an individual user is necessary to develop *preventive measures* that address the actual problematic. Only then can a company ensure that the local MoT doesn't repeat itself for other customers. Companies are well advised to recognize local MoTs quickly and react swiftly to prevent them from gaining momentum. Having lost one customer may not seem like much of a damage at first glance. Yet, without counter measures, an indignant customer can spread the word, sow doubt among potential future customers and undermine the trust of the existing customer base. The adequate way to react to a local MoT therefore must be to work on its underlying value harms. Here, it is important to understand that the value implications of a technology depend not only on the artifact itself and the designers' intentions, they also depend on the individual user's perceptions. Little help is done when a company responds to a local MoT with the argument, that their technology just was not used "the right way". Of course, not all usage scenarios can be foreseen when developing a technological artifact. This however, makes it all the more important to take local MoTs seriously and use them as a source of knowledge to improve one's product. Addressing the core problematic (in Danielle's case technology that is perceived as intrusive and autonomous) can be a soothing signal toward the already enraged customer and limit the damage that results from a local MoT. Understanding what is behind global MoTs, on the other hand, is relevant for the development of *counter measures* by the companies involved. If the status quo of a company's technology produces strong negative reactions, which are widely discussed in

public, only an understanding of the true origin of these sentiments will allow the company to actually restore trust and substantially improve their products. Paying lip service without addressing and working on the core value problem will only widen public scrutiny.

As our examples have shown, the consequences of a MoT can be economically significant. MoTs are experiences that trigger long-term changes in the user, at times irretrievably altering their perception and attitudes toward the technology involved. As described by Badiou, the loyal subject is not likely to lose their commitment and cease existing over time. Instead, a movement of loyal individuals may only gain more momentum over time. The consequences of the Cambridge Analytica scandal have shown us just that: Countless users quit Facebook or altered their usage behavior, consciously sharing less information on the platform or adjusting the privacy settings (Creative Strategies 2019). The message was quickly spread on social media themselves, for example with the Twitter Hashtag #DeleteFacebook (Carrillo et al. 2019). Lawmakers weighed in and initiated a series of lawsuits and bills that touch upon a wide range of aspects and affect the entire information industry. From a societal perspective, it is possible to understand the public discourse and controversies more clearly when we have subjective reactions in mind. It is possible to shed light on the underlying reasons for specific reactions to a rupturing MoT - whether that underlying reason is loyalty to a new truth or a potentially dangerous dogma. Figure 1 summarizes the key elements of the MoT phenomenon.

7. Why MoTs are important for firms witnessing digital transformation

We have outlined to this point what MoTs are and we have described their characteristics and importance to understand ethical and value-change dynamics accompanying digitalization. We have also recommended how companies might go about MoTs. The question is now how urgent this matter is, given that MoT have not yet been systematically considered by companies and certainly not in the way we have described it here.

In the following we therefore show how digitalization is a *source* of metaphysical ruptures as well as it is a *catalyst* for subjectivation dynamics. Against this background we believe that MoTs should be considered and observed to a much greater extent than this is the case today, ideally becoming part of the product-work companies pursue in managing their marketing mix.

7.1. Digitalization as source of metaphysical rupture

When we look at digitalization on a very abstract level, we see how it is itself a source of metaphysical ruptures. Technical artifacts are positioned between the designers' intentions on the one side and the actual individual user on the other. Normally, there is some discrepancy between designers' intentions and the actual user experience - a discrepancy driving unexpected surprises (Norman 2007).

Then, there is the problem of plain software faults. The processed data may contain errors (being outdated or containing duplicates); the system may not have sufficient data; processing can see bit-flips, or hackers may have subtly changed the program's data. Even when developing a system for high-security areas, such as in the field of aeronautical engineering or hospital systems, manufacturers hardly achieve less than 0.5 errors per 1000 lines of code, which is a tremendous failure potential seen that modern programs have millions (sometimes hundreds of millions) lines of code (Laird/Brennan 2010). In addition, hacker attacks are steeply on the rise. In the 18 months after the European data protection regulation went public, demanding from companies to publish their data breaches, over 160.000 of such breaches were registered (DLA Piper 2020). So, a case like Danielle's is nothing unusual, yet it undermines customers' trust in the system, their awareness of privacy, security and control.

When system designers conceptualize a technological artifact, they usually intend that it realizes a certain value for the user. A social network, for example, is intended to realize the value of connection or friendship among its users. Whether this intended value potential actually materializes for a user depends on many factors though, which cannot be fully anticipated by the designer, such as the context in which an artifact is used and the individual user's circumstances (van de Poel/Kroes 2014). The difference between designers' value intentions and the actually realized values can lead to incongruity.

A third challenge is that designers' intentions need not always be solely in the users' interest. Many of a social network's features are primarily designed to generate profit. Facebook implemented an API into its application that granted business partners such as Cambridge Analytica comprehensive access to user data. While generating profits for the social network, the function also unfolded harmful value realizations for users whose data was shared without consent. It is a peculiarity of digital business models that the user base of digital products is often not the company's actual,

profit-generating customer base (Zuboff 2019). Income is instead often generated by displaying paid third party advertisements to a precisely targeted user group or to sell personal data in packaged form for different prediction models. This constellation of what Zuboff calls ‘surveillance capitalism’ is bound to create conflicts of interest and requires companies to vigilantly monitor not only user migration behavior, but also legal developments.

Finally, digitalization allows innovations to be marketed rapidly, iteratively, sometimes with the help of suboptimal early versions. This agile industry dynamics tends to leave less room to consider long-term impacts than is given in more classical industries.

7.2. Digitalization as a catalyst for MoT dynamics

Among catalyzing factors, we group circumstances that play out *after a MoT* has occurred. The elements we consider here accelerate the subjectivation dynamics and can cause the impetus of a MoT to quickly gain momentum.

The digital space has removed temporal and spatial distances between persons (Belk 2013). News of an event spread widely and rapidly online, even when they are initially posted in small or local news portals (Wang et al. 2014). MoTs are livestreamed directly on online platforms to a global audience, increasing the potential number of witnesses. Meanwhile, social media is ubiquitous and can assume a key role in the evolution of a MoT, effectively amplifying and spreading it. Kramer et al. (2014) have pointed to emotional contagion in social networks, a factor that can dramatically impact the social dynamics after a MoT. The emotional valence of a consumed piece of content has the power to trigger a corresponding feeling in the viewers. Social media influence collective perceptions and attitudes due to the filter bubbles they create (Pariser 2011). Algorithmically categorized users are presented with personalized content that matches their already existing world view. This triggers a mechanism called “availability cascade”: Existing beliefs are reinforced because statements and assumptions that persons encounter repeatedly become increasingly plausible (Kuran/Sunstein 1999). Hence, the realities created and reinforced in virtual realms shape users’ perception and interpretation of events and can thus accelerate MoT dynamics.

These changes that digital technology have brought to social movements can hardly be underestimated. In a collectively experienced global MoT, these dynamics can impose a dramatic risk to companies: they can quickly lose credibility, stakeholders’ trust, and control over the public

narrative. This shows that MoTs, even when local incidents, need to be taken seriously and analyzed profoundly to understand the value implications they point to.

8. Conclusion

MoTs can pose a tremendous risk to companies, as they can rapidly alter the public discourse, undermine customers' trust, threaten a company's industry position and induce regulatory consequences. Defined in this article as rupturing events which unveil an underestimated value-related truth, MoTs create an unexpected and not always pleasant space for companies to rethink the ethical implications of their technologies. Three possible customer or market reaction patterns to MoTs are described in this article based on Badiou's event theory: *fidelity*, *persistence* and *rejection*, whereby fidelity is the most essential type, because it forces a new value truth into being and makes it impossible for companies to ignore the event. Pointing to a deeper meaning level of things, the material truth that becomes discernible in MoTs can guide companies in a positive way to better understand the value sphere in which they operate beyond profit.

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