

# **The value of long-term co-innovation relationships: experiential approach**

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**Tuula Lehtimäki\* and Hanna Komulainen**

Oulu Business School,

University of Oulu, Finland

Email: [tuula.lehtimaki@oulu.fi](mailto:tuula.lehtimaki@oulu.fi)

Email: [hanna.komulainen@oulu.fi](mailto:hanna.komulainen@oulu.fi)

\*Corresponding author

**Minna Oinonen**

School of Industrial Engineering and Management,

Lappeenranta University of Technology, Finland

Email: [minna.p.oinonen@gmail.com](mailto:minna.p.oinonen@gmail.com)

**Jari salo**

Faculty of Economics and Management,

University of Helsinki, Finland

Email: [jari.salo@helsinki.fi](mailto:jari.salo@helsinki.fi)

## **Abstract**

Co-innovation often occurs in trustful long-term relationships when a fruitful match is found. Evaluating the value of those relationships is difficult but necessary for their management. Discussions of business-to-business relationship value have been revolving more around utilitarian elements even though experiential value aspects have gained increasing research interest. Here, the concept of experiential value is applied to understand the value of long-term co-innovation relationships. An exploratory case study of such a relationship between a supplier, its customer, and a university was built on in-depth interviews with key informants from each party. The study provides a multi-level framework of experiential value in the context of co-innovation relationships that encompasses the subjective, temporal, and contextual aspects of value as well as personal relationships and projects as devices that transfer individuals' value experiences between individuals and organisations, and through time. This study contributes to relationship value and co-innovation research by elaborating on the experiential aspects of relationship value.

**Keywords:** Business relationship; case study; co-innovation relationship; collaborative innovation; experiential value; explorative case; long-term relationship; project business; relationship value; triadic relationship.

**Biographical notes:** Dr. Tuula Lehtimäki is a Postdoctoral Researcher at Oulu Business School, Finland. Her research interests include commercialisation of new products, innovation management, co-innovation, and value in business networks. She has been published, e.g., in *Industrial Marketing Management* and *The International Journal of Technology Marketing*.

Dr. Hanna Komulainen is a Postdoctoral Researcher at Oulu Business School, Finland. Her research interests include, e.g., value creation, service marketing and B2B relationships. She has been published, e.g., in the *Journal of Service Management*, *Management Decision* and *Journal of Business and Industrial Marketing*.

Dr. Minna Oinonen's research interests include management of customer co-development in business-to-business markets. Her work has been published, for example, in *The Journal of Business & Industrial Marketing*.

Dr. Jari Salo is a Professor of Marketing at the University of Helsinki. He is also an Adjunct Professor of Marketing at Aalto University. His research interests include management of innovation and digital marketing. Salo's work has been a part of more than 150 publications. His research has been published in journals such as *Industrial Marketing Management* and *The International Journal of Information Management*.

## **1. Introduction**

A critical reason why companies build relationships is the value that relationships generate (Biggemann and Buttle, 2012). Marketing scholars have long been pointing to value creation as the key to understanding economic exchange. The extant literature has provided several differing views and conceptualisations of value (Gummerus, 2013), but recently, phenomenologically (i.e., experientially) determined value has been at the core of discussions of value (e.g., Helkkula, Kelleher and Pihlström, 2012). The existing research on experiential value has mainly focused on the B2C context and individual consumer's perspective (e.g., Verhoef et al., 2009). It has been proposed that experiences impact customer value, which in turn impacts subsequent experiences (Helkkula and Kelleher, 2010).

Thus, to understand value, it is critical to understand experiences, and in this study, we extend the viewpoint to industrial B2B relationships where the research on value has been quite utilitarian in nature defining value as a cognitive trade-off between benefits and sacrifices (see Sanchez-Fernandez and Iniesta-Bonillo, 2007). These studies have also viewed the role of the organisation as predetermining the sources of value while customers have been viewed primarily as passive buyers or users of a particular service or product (Shah et al., 2006). They have also emphasised the organisational level of value assessment whereas the individual's role has often been neglected. We suggest that it is not expected that relationship value can be clearly categorised into value elements and then simply summarised (e.g., Ulaga and Eggert, 2005; Walter et al., 2001). Further, the focus on economic and cognitive reasoning is questioned, as the role of emotions and other non-economic (and individual level) aspects are also becoming increasingly important in a B2B context (Mencarelli and Raviere, 2015). In addition, as the currently heavily applied service-dominant logic suggests, in many business-to-business exchange situations, both parties are actively creating value together (e.g., Vargo and Lusch, 2011). There is room for fresh perspectives when examining value in a B2B relationship context.

In this study, we aim to create a more extensive yet in-depth understanding of value by approaching it as a subjective, temporal and contextual phenomenon that is in accordance with the recent experiential view on value (Helkkula et al., 2012). For this purpose, we focus on exploring value in long-term co-innovation relationships that have an extensive common history and that consist of numerous projects between the parties. Here, co-innovation refers to the ideation, development, and commercialisation of innovative new offerings between organisations that actively and interactively work together (Buur and Matthews, 2008; Lehtimäki et al., 2012) and combine resources in order to boost innovativeness (Håkansson et al., 2009). This represents a highly relevant and interesting context for understanding

experiential value since it enables capturing and further elaboration on the essence of the concept. First, subjectivity is in the core of value in long-term co-innovation relationships given that perceived value is influenced by both individual experiences and the social relationships that any individual actor has (Gummerus, 2013), e.g., with project group members, one's own organisation's members and other partner organisations' members. Secondly, temporality plays an important role in enduring co-innovation relationships as past experiences and future expectations inevitably affect value perceptions of the different actors involved (Helkkula et al., 2012). Moreover, the fact that the relationship consists of several consecutive projects may offer new insights into how temporal aspects add to the relationship value. Thirdly, perceived value is strongly influenced by the context (Corsaro and Snehota, 2010). Individuals and organisations involved form a specific setting for experiencing value and if something were changed, that would influence the value experiences. Finally, exploring these specific types of relationships in which creativity and innovation are at the core of the business (and the outcome and its value may not always be clear right away or even after a while) may offer us interesting insights into the hedonic and non-economic aspects of value in contrast to traditionally emphasised utilitarian factors of value in industrial B2B relationships.

The unpredictable nature of innovation brings both positive and negative implications for the value of co-innovation relationships. The expected value can be high, but evaluation of relationship value is difficult. However, understanding value is important for the firms involved in co-innovation relationships. Firms need to build some basis for making decisions on the continuance and development of its relationships. Although value research has shared a focus on what makes business relationships valuable and how their value can be assessed (see Corsaro and Snehota, 2010), co-innovation has not, to date, been of major interest in that research stream. Considering the developments in value research, it can be assumed that examining what constitutes the experiential value in the co-innovation relationship can provide an important

addition to co-innovation that remains under-researched, and potentially examining experiential value in a cooperative B2B relationship can broaden the contextual base for that concept.

The purpose of this study is to understand *what constitutes the value of a long-term co-innovation relationship*. Previous research on the value of relationships will form the basis for a theoretical framework, which provides a general understanding of the studied phenomenon and an analytical framework for it to be explored empirically. A case study of a triadic, project-based, long-term co-innovation relationship between a supplier, its customer, and a university presents views herein on the multiple levels of experiential value. Our approach reveals a complex range of aspects that influence value perceptions of co-innovation relationships beyond the more easily grasped financial and utilitarian evaluations and thus helps in managing these kinds of relationships. Co-innovation is difficult to control (Bruce et al., 1995), and careful management is needed to capture its expected value (Wilson et al., 1995). The case findings are elaborated, along with managerial implications, limitations of the study, and future research directions. This study contributes to research on value in B2B relationships by suggesting a more complicated, experience-based understanding of diverse aspects of value in long-term co-innovation relationships. It also contributes to co-innovation research by elaborating on the different levels of value analysis and their interaction.

## **2. Experiential view on value in co-innovation relationships**

Creating value is one of the primary goals of marketing and the key purpose of economic exchange (see, e.g., Babin and James, 2010; Gummerus, 2013; Pekuri et al., 2014). Despite various attempts to create understanding of perceived value, researchers have produced differing views on the concept. Traditionally, the most popular conceptualisations of value have been functional in nature defining value as a cognitive trade-off between benefits and sacrifices (e.g., Zeithaml, 1988). In this approach, perceived value is conceived with a utilitarian

perspective, whereas economic and cognitive reasoning is used in value assessment. This simplified view might have worked in evaluating simple transactional relationships but as understanding of business relationships has grown, that view has been challenged by several studies where perceived value has been seen as a multi-dimensional construct that forms a holistic representation of a complex phenomenon (see Sanchez-Fernandez and Iniesta-Bonillo 2007 for a systematic review of perceived value). In multi-dimensional research streams, it has been acknowledged that the difficulty of conceptualisation and measurement of perceived value is a consequence of its complex, multi-faceted, dynamic, contextual and subjective nature. We agree, and argue that the existing categorisations can at best offer only a limited understanding of value in project-based long-term co-innovation relationships due to the unpredictable and longitudinal nature of technological innovation and the multidimensionality of value in these kinds of relationships.

Most of the extant literature dealing with B2B relationship has adopted a traditional view on value emphasising utilitarian, cognitive, functional, and task-related aspects of value. In other words, industrial actors are often seen to be guided primarily by rational criteria (see also Corsaro and Snehota, 2010) and paying less attention to, e.g., emotional aspects of value (Callarisa-Fiol et al., 2011). Most recent research in B2B, however, emphasises that it is worth considering the role of emotions more closely, for example in explaining organisational purchasing behaviour (Mencarelli and Raviere, 2015). Non-economic aspects such as feelings, atmosphere or emotions can be highly important in establishing lasting customer-supplier relationships (Andersen and Kumar, 2006). Corsaro and Snehota (2010) suggested that asymmetries in value perceptions influence involved actors' conduct. However, a trusting relationship can absorb minor setbacks (Blomqvist, 1997; Gupta and Sahu, 2015), and even an unbalanced relationship may fall into a state in which parties accept the situation as it is and let it be, if major changes, consecutive failures or remarkable failures do not occur (Blois, 2010).

In keeping with this phenomenon, this study argues that the analysis of value in B2B relationships should more openly examine concepts that are not related exclusively to matters of an economic and rational nature. We argue that looking at value as an experience-based concept may provide important insights to the more individual level and non-economic aspects of B2B relationship value.

Recent research acknowledges value as a phenomenon that relates to actors' experience and value-in-use (e.g., Heinonen et al., 2010; Sandström et al., 2008). For example, current discourse around S-D logic (Vargo and Lusch, 2004; 2008) has redirected attention on the phenomenological nature of value creation (see also Edvardsson, Tronvoll and Gruber, 2010). As stated by Vargo and Lusch (2008, p. 70) "value is always uniquely and phenomenologically determined by the beneficiary". Holbrook (1994, 27) defines value as an "interactive, relativistic preference experience" meaning that value is an experience based on interaction between actors that is also relative. Helkkula et al. (2012) talk about "value in the experience" that refers to an individual's lived experiences of value that extend beyond the current context to also include past and future experiences and individual's broader lifeworld contexts (Helkkula et al., 2012). More specifically, they define value in experience as "1) individually intra-subjective and socially intersubjective; 2) both lived and imaginary; 3) constructed on previous, current and imaginary future experiences while being temporal in nature; 4) emerging from individually determined social contexts" (p. 61-62). Thus, experientially determined value, which has recently landed in the core of the discussion of value especially in service contexts (see also Helkkula et al., 2012), is well suited to the context of co-innovation relationships as well, where all actors are active and in interaction create something new. In this study, co-innovating actors are both users and providers of resources (Cantù et al., 2011) and need to be understood both at individual and organisational levels. Additionally, the value of



co-innovation might differ for each party and is thus relational. Therefore, we suggest that adopting this perspective also aids in better understanding value in co-innovation relationships.

In line with the above phenomenological outlook, this study agrees that any analysis of value should acknowledge its subjective, temporal, and contextual character. *A subjective view of value* means that it is dependent on individual assessments of what is experienced (see Walker et al., 2006). Holbrook (1994) emphasises that value is a personal assessment, meaning that what is valuable for one person need not to be so to another. Furthermore, it is not just the offering or relationship that determines value but it is influenced by the person and their qualities (see Lindgreen and Wynstra, 2005). Thus, value in the experience is always a subjective phenomenon (Holbrook and Hirschman, 1982). Evidence in relation to experience is never an objective record of what really happened, but rather represents an individual's sense making in relation to specific phenomenon (Helkkula et al., 2012). However, different parties' perceptions may also be interdependent and influence subjective value determination (Gummerus, 2013). This notion is important specifically when exploring long term, project-based co-innovation relationships, as it encourages one not to focus on single individuals or organisations, but their relationships as well.

In B2B literature on value there is a consensus that value is heterogeneous from an inter-organisational perspective and also from an intra-organisational one, since members of one and the same organisation may have differing perceptions of the value (Ulaga and Chacour, 2001). This particular feature of industrial markets has also led to a matter of conceptual confusion: how can we deal with value at organisational level, since value is always based on an individual's subjective perception? Or as Gummerus (2013) puts it, even when several actors engage in value co-creation processes, one party always interprets the goodness of the activities of multiple parties based on one's individual perspective (i.e., his/her subjective interpretation).

She then suggests that there might coexist multiple different perceptions of value, but when multiple actors are involved, the perspective needs to be anchored to a certain actor such as an individual, firm or network. By extension, this suggests that a firm or a network could be “an actor” in the sense of perceiving value but that does not tell how that firm or network-level perspective is built up.

Subjectivity of value is also closely related to *temporality*. An actor's personal history and past experiences are an essential part of value perception (Heinonen et al., 2010). They shape the actor's expectations of future value, and therefore temporality is seen to be an important aspect of value, which is discussed here as a time-sensitive concept with past, present, and future dimensions (see Flint et al., 1997; Komulainen et al., 2013; Woodall, 2003). Actors' value perceptions change over the course of a relationship (e.g., Beverland and Lockshin, 2003; Flint et al., 2002). Although we agree with this notion, in this study, temporality is more about how the past and future are reflected in current value perceptions, rather than about how perceptions change, which has already been widely addressed in extant B2B research (e.g., Flint et al., 2002).

As suggested by a phenomenological view on value, individuals' iterative sense-making is not a linear process as current value in the experience is constructed based on previous and imaginary future experiences (Helkkula et al., 2012). Individual actors' current interpretations of value are shaped by their intentions (Corsaro and Snehota, 2012), and currently perceived value is dependent on past experiences (see also Komulainen et al., 2013). Therefore, value perceptions take place in the present time, even though the past and future value influence perceived value at each moment.

What is also important considering the context of the present study, is the temporality of the dynamics (see also Mäkimattila, Rautiainen and Pihkala, 2016) that occurs when several separate, yet intertwined projects, wherein part of the project personnel stays the same, some change. What happens in one project may affect the perceived value of the co-innovation relationship. And vice versa, value perceived at the relationship level may affect not only the value perceived from one project, but also the realisation of forthcoming projects in the future. Therefore, it is also important to identify this kind of dynamism and its influence at individual, project and relationship levels since it may be vital for understanding value in this specific type of relationship.

Finally, in relationships the way in which actors make sense of the *context* strongly influences their interaction with others and how they perceive value (Corsaro and Snehota, 2010; Lapierre, 1997). Chandler and Vargo (2011) define context as “a unique set of actors and the unique reciprocal links among them” (p. 41). It has been argued that value co-creation is inherently contextual since resources become valuable only after they have been integrated in a particular way in a particular situation, and that each context is unique (Vargo and Lusch, 2011; Edvardsson et al., 2014). In addition, context is always social, yet it is determined individually (Helkkula et al., 2012a) and it can be viewed at different levels including individual, micro/dyadic, meso, macro and meta levels (Leroy et al., 2013, Still and Komulainen, 2016). From different levels, one can observe different things (Leroy et al., 2013). In this study we focus on the micro level referring to 1) an individual person, 2) to an organisation and 3) organisational relationships. The micro level is the contextual layer depicting how a single actor operates and perceives value and it is the core layer of analysis (Leroy et al., 2013). Figure 1 depicts the conceptual view on experiential value used in this study and shows how the experience is tied to an individual that is influenced by the contextual and temporal aspects surrounding the individual.

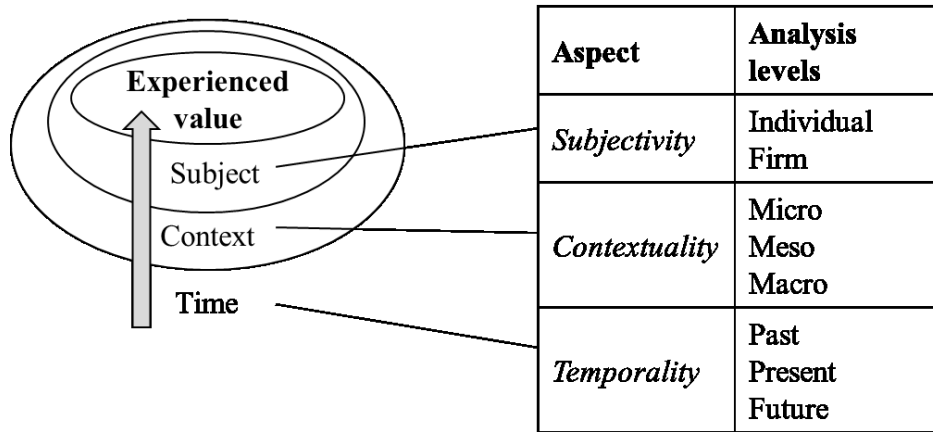


Figure 1. Aspects influencing experiential value.

### 3. Methodology

A qualitative exploratory case study is conducted (Denzin and Lincoln, 2000; Yin, 2009) to contribute to a holistic understanding (e.g., Eriksson and Kovalainen, 2008, p. 5) of the complex, context-based phenomenon (e.g., Bonoma, 1985) of experiential value in long-term co-innovation relationships. We rely on a single embedded case as it enables us to focus on this complex phenomenon on various levels and create an in-depth understanding of it. The single-case-study approach is reasonable when the study aims to challenge current theoretical discussion or to represent a unique case (Yin, 2009), both of which apply to this study. The case here refers to a long-term triadic co-innovation relationship between a supplier, its customer, and a university that began about fifty years ago. The case was selected because it was representative of the complex phenomenon and it enriched the study's teaching potential. The relationship can be said to have reached a mature state and it can be seen to be moving towards either a change or an end to this form. The case offers an opportunity to analyse experiential value on individual, project and organisational levels.

The data focuses on the co-innovation relationship in question and three embedded co-innovation projects, referred to here as Camera, Analyser, and Simulator. The interviewees talk

about a project as revolving around the development of a particular solution rather than consecutive public funding periods of two to three years, given that the development of these kinds of process solutions and the necessary technologies often take decades in practice. When there have been breaks in public funding, the supplier, for instance, has organised funding to secure the continuance of the development work. Co-innovation tends to focus on certain areas of the production process at a time, starting from a certain problem of the customer, for example, to cooperative technology development and, finally, to development of the actual solution.

The Camera project was active from approximately 2001 to 2006 and the Analyser project from approximately 2003 to 2009. The Simulator project started around 2009 and was still running during data collection in 2012. These projects were chosen from a pool of co-innovation projects that the researchers collected from the supplier, which is known to be active in its collaborative research efforts. These three projects provided a view on co-innovation projects among three different types of parties that had had a long history of innovating together. In addition, the key people involved in the selected projects were still working in the organisations.

The main data came from nine in-depth interviews with key informants (Kumar et al., 1993)—three from the customer, two from the university, and four from the supplier. Each interview lasted approximately two hours. Eight of the nine informants were involved in two or three of the three examined projects, and due to their long involvement in the relationship, they were able to discuss past, current, and future issues of the relationship. For example, one supplier interviewee and one customer interviewee have known each other for over 25 years and have been involved in the co-innovation relationship nearly from its beginning. The informants from the university have been involved in the relationship for about twenty years and, as they are successors of the previous key contact person of the university, they have knowledge about the co-innovation projects from before their own time in the relationship.

A semi-structured interview guide focused on the events of the co-innovation projects and on the relationship. In order to track the time of events and to grasp uninfluenced perceptions, the interviewees were asked to answer freely and in a story-like fashion, but direct questions about value were not presented, which differs from the study by Corsaro and Snehota (2010), for example. Each of the projects is discussed by informants from each of the three organisations. Informants were recruited through the snowball method (Biernacki and Waldorf, 1981). Complementary data such as technical papers, project plans and reports, and public web pages were examined for data triangulation (Denzin, 1988). For example, project events, focus, and results were checked against these. Two of the authors also had a well-grounded understanding of the supplier and its innovation activities through previous research projects with the company. A draft of this study was reviewed by a key informant from the supplier, who was familiar with the broader picture of this relationship.

The analysis followed abductive logic, in which theoretical and empirical understanding emerged in parallel, supporting each other through systematic combination (Dubois and Gadde, 2002). At first the focus was on understanding project-level value, but as that did not sufficiently explain the data, the relationship-level value was subsequently examined. Then we noticed the limitations of traditional utilitarian relationship value models and began to search for alternative concepts, ending up with experiential value that finally helped us to better understand our data.

Data analysis included reduction, display, and conclusions (Miles and Huberman, 1994). First, the project events and the personal-level relationships between the parties were mapped out in order to understand the projects and the relationships as a whole. The data were then categorised at the project level, according to project expectations, events, resources, and outcomes, and to grasp the experiential value, the subjective, temporal, and contextual notions were categorised,

as well, along with perceptions of the examined dyadic and triadic relationships. The project-level findings were then analysed together, and at that phase, the personal-level relationships, key persons, and project teams became crucial to understanding the experienced value.

## **4. Empirical study**

### *4.1 Overall description of the relationship and the projects*

Co-innovation relationships were examined in an industry in which suppliers often test new technological solutions for customer processes, business relationships are quite steady, and changes are slow. As their processes are unique, operative companies in the field do not compete directly, and so they are not as secretive about their technologies as is the case in more competitive industries. In addition, technology providers in the industry often look to research institutions for technology development resources.

The supplier is a knowledgeable and well-regarded global technology provider. The customer is a leading edge, high-performing operative company in terms of processes and technological expertise. The particular laboratory and the university personnel are acknowledged experts in their field. The supplier, the customer, and the university in question have decades of shared history in business, research, and innovation. Dyadic co-innovation projects also take place between the organisations as well as projects with additional parties. The supplier and the customer were part of the same company for a long time, which partly explains their close relationship, but they have operated as separate entities for over a decade now.

While some of the personnel involved have changed over the years, the three *key individuals* who regularly initiate new cooperative projects in this particular field of technology have remained more or less the same, and they have long-standing personal relationships that connect

all three organisations. Project groups remained more or less the same throughout the projects in question.

None of the examined projects resulted directly in a commercially viable new offering or in notable and verified improvements of processes. However, looking at individual projects, all parties appear to have benefited in terms of learning, the developed outcome, and the relationship. All parties mentioned as a benefit that the projects supported maintenance of their co-innovation relationship. The invested resources and how well the targets of each party were met vary amongst the projects and between the parties (see Table 1).

Table 1. Expectations, outcomes, and resources at project level.

Project	Expectations	Outcome	Resources	Summary
<p><u>Camera</u></p> <p>A new kind of process analysis camera, not for commercial use</p> <p>C and U perhaps the most active parties</p>	<p>S: To explore what can be done with the technology, either to develop a new camera or to develop new features for their existing camera (partly met)</p> <p>C: To develop process analysis and performance, to explore what can be done with the camera (partly met)</p> <p>U: To do research, to solve practical problems, to develop a camera (met)</p>	<p>S&amp;C&amp;U: Maintenance of positive working relationship</p> <p>S: New features for their own camera; learning</p> <p>C: Learning; camera was used for some time during the process; process improvements</p> <p>U: Research results, learning</p>	<p>S&amp;C&amp;U: Financial; working hours of 5 to 10 individuals; expertise of each actor</p> <p>C: Provision of facilities for development and testing</p> <p>U: Major workload; coordination and major responsibility to public funding organisation for the project</p>	<p>S: Gained the outcome with relatively small resources</p> <p>C: Gained the outcome with perhaps greater resources than those of the other parties</p> <p>U: Gained the expected outcome with appropriate resources</p>



<p><u>Analyser</u></p> <p>Based on previous projects on process analysis, a new kind of process analyser (or add-on for an existing analyser), not for commercial use</p> <p>U the most active party</p>	<p>S: To explore what can be done with the technology and to develop a new offering or new features for the current analyser (partly met)</p> <p>C: To develop process analysis and performance (partly met)</p> <p>U: To conduct research; to solve practical problems; to develop an analyser (met)</p>	<p>S&amp;C&amp;U: Maintenance of positive working relationship</p> <p>S: Learning</p> <p>C: Learning; analyser used to improve process</p> <p>U: Research results; learning</p>	<p>S&amp;C&amp;U: Financial costs; working hours of 5 to 10 individuals; expertise of each actor</p> <p>C: Provision of facilities for development and testing</p> <p>U: Major workload, coordination and major responsibility to public funding organisation for the project</p>	<p>S: Gained the outcome with relatively small resources</p> <p>C: Gained the outcome with perhaps greater sacrifices than those of S</p> <p>U: Gained the expected outcome with appropriate resources</p>
<p><u>Simulator</u></p> <p>A simulator for operator training, which then was developed into a dynamic process operator tool (project ongoing)</p> <p>S more active here than in the camera or analyser projects</p>	<p>S: To develop a new offering or new features for the current offering (not totally met as yet)</p> <p>C: To develop process operators' performance (partly met)</p> <p>U: To do research, to solve practical problems (met)</p>	<p>S&amp;C&amp;U: Maintenance of positive working relationship</p> <p>S: Learning; possible new offering</p> <p>C: Learning; training simulator (dynamic simulator still in progress) (improved operations)</p> <p>U: Research results; learning</p>	<p>S&amp;C&amp;U: Financial costs; working hours of 5 to 10 individuals; expertise of each actor</p> <p>C: Provision of facilities for development and testing</p> <p>U: Major workload, coordination and major responsibility to public funding organisation for the project</p>	<p>S: Gained the outcome with relatively small resources</p> <p>C: Gained the outcome with greater resources than those of S</p> <p>U: Gained the expected outcome with appropriate resources</p>

Key: S=Supplier, C=Customer, U=University

Across all projects, the university took on the primary responsibility of coordination and met its expectations relatively well, succeeding in its research efforts. The supplier was not perhaps as active in the actual project work, but it provided resources. The supplier had some unmet expectations, as the projects did not result in commercially successful new offerings right away; however, the projects did provide learning or new features for existing offerings. The customer benefited in terms of learning and some process improvements, providing manpower and facilities for development and testing. The developed solutions ran for some time in the customer's processes but were not applied for ongoing use; major improvements remained unverified.

It seems that the expectations of the customer in particular were only partially met. In addition, compared to the other parties, the customer seemed to invest the most varied set of resources in all projects. The customer provided manpower, financial resources, time, expertise, and remarkably open access to its processes, as well as data that was critical for the functioning of this co-innovation triad. The customer carried the risk of production disruption and information leakage. All parties considered that the benefit of these projects to the customer was sometimes unclear. This is in part due to constant developments in the customer's production processes, which make it difficult to measure the benefit of a single change. Nevertheless, some projects seemed to offer less to the customer. A university researcher used the ongoing simulator project as an example:

*"In this training simulator development, in particular, the benefits for [the customer] are not nearly as great as they will be for [the supplier]. In some earlier [projects], where we developed measurement devices, the improvement for [the customer], if it provided some improvement, improved their production right away. They really got good results from it, and that might be*

*one reason for why [the customer] is still interested in continuing [the simulator project]”.*

(Researcher, University)

The customer interviewees also expressed their positive expectations on the project regardless of the invested resources and the quality of the current outcome:

*”We strongly intend to continue the project and we believe that it even benefits us. We would not do that otherwise; hang around for years, if we did not benefit from it”.* (Manager, Customer)

The asymmetry between the evident benefits for the customer and for other parties is acknowledged by the parties. *”This customer relationship has lasted long and [the customer is] accustomed to receiving all kinds of equipment from us, some of which work and others that don't, and they take that very well”.* (Director, Supplier)

In addition, a supplier interviewee referred to asking the customer about a testing opportunity as asking for a *favour*, and spoke of how the customer *allows* them to do testing at their facilities. Regardless of the unmet expectations and unbalanced investments, each actor insisted that they were satisfied with the projects and with the relationship. In order to make sense of this, the contextual, temporal, and subjective aspects of the experienced value are analysed in the three co-innovation projects and in the underlying relationship.

#### *4.2 Contextual aspects*

The positive expressions can be partly explained by the research orientation and innovation experience of the actors.

*"Of course the goals need to be high, all kinds of visions, when we start to plan a project, but as long as the major goals have been achieved [we are satisfied]. When you try something new, you have to use your imagination—what could be achieved. It might be that after the first test runs, we notice that this takes us nowhere". (Industrial Manager, Customer)*

The actors acknowledged that, during co-innovation, expectations are adjusted throughout the project because one cannot know beforehand what will work. However, the potential value of co-innovation was considered to be high.

The intrinsic value of the co-innovation relationship itself might be one explanation for the more positive experiences than could be judged from investments and outcomes. As the supplier interviewees note, innovating continuously with the same few customers might not even be beneficial for the innovativeness of the cooperative venture in the long run. However, there are positive sides for long co-innovation relationships, too. The well-functioning triadic co-innovation relationship, where co-innovating with known and trusted actors makes cooperation easier, and the special expertise and resources of each actor complement each other, efficiently supports the achievement of their individual goals.

*"This seems to form a functioning triad, there are no useless project parties; actually, we do not miss or need any additional parties. (...) if there are too many parties in a project, some parties may work alone in their corner and others in another. But with these parties, it works really well". (Researcher, University)*

#### *4.3 Temporal aspects*

The temporal and subjective aspect may partly explain why continued co-innovation between the actors was taken for granted, regardless of the noted project-level asymmetries in meeting expectations and investing resources. The parties have a long history together. Past and future

aspects of value influence each other and current value perception. For example, the positive past experiences and potential future benefits from the relationship appear to influence how the customer sees one particular project, as is seen in the previous interview quotation related to the simulator project. Current perceptions might also influence interpretations of past events. Overall, it appeared difficult to discuss or evaluate a single project at a time. Each actor reflected on the projects in the context of their experiences of the whole relationship and its future. Hence, the overall experience was not about individual projects, but about the relationship.

*"We have been doing things together with [the supplier] for so long, we have not had any friction, ever. And we were previously parts of the same company, so all development has always been done here, and this has been the testing environment for [the supplier]"*.  
(Engineer, Customer)

#### *4.4 Subjective aspects*

This combination of parties provides distinct subjective value for each organisation. For the *supplier*, this relationship offers an opportunity to explore far-reaching technological solutions with limited investment, but high potential because of access to the customer's processes and to the expertise of the customer and university personnel. The supplier states that it is particularly important to co-innovate continuously with the customer because then it is easy to introduce new ideas for testing, which would not be the case if the process were intermittent. The supplier can utilise the acquired knowledge in the development of its offerings and in its general business, and learning is sometimes already realised in new offerings during a project. The supplier does not need to fear opportunism or misuse information, as the operational logic of the other parties are different. For example, the university has had no interest in patenting. The loss of this relationship would not be irreplaceable for the supplier, as it has other co-innovation relationships.

For the *university*, this co-relationship offers unique research opportunities, especially because of the open access to the customer's process, without which the researchers could not test their ideas in practice. The relationship provides financial resources, manpower, and valuable insights from the supplier and the customer. The loss of this co-innovation relationship, or a total project failure, would mean losses in research financing and difficulties in finding a new environment and partners for research.

For the *customer*, the relationship potentially offers significant process improvements with limited sacrifices. As an operative company, it can invest in technology development in a restricted manner. The supplier's involvement directs the interests of skilled researchers towards useful issues, benefiting both the supplier and the customer. The customer and the supplier benefit from the university's coordination of projects. The customer could find it hard to replace this relationship because of the unique, long-term, and deep cooperation between the parties. However, it could build new cooperative relationships or deepen existing relationships with other technology developers or universities.

Organisation-specific perceptions also became apparent in how a co-innovation project was understood. For example, for the supplier, the Camera project meant exploration of the camera technology and comparison of the project camera with their own existing camera, including development periods with actors not examined here. For the university and the customer, the project was about developing the camera first together and then in conjunction with the supplier. In addition, interviewees defined the beginning and ending times of each project according to their own viewpoint and involvement in the projects. Therefore, value perceptions are not directly comparable on either a personal or organisational level.

Supplier interviewees do not seem to question the continuance of the co-innovation relationship with the customer even though they know that major changes are taking place; the customer company has new owners, the customer's operations will undergo major changes in the next ten years, and some key individuals in the relationship will leave. However, these changes and even critical views of the relationship are reflected on the customer organisation's side by one key individual who has been involved in the relationship for decades but who will probably leave the company in the near future. It seems unlikely that any of the supplier interviewees have not yet acknowledged these views. The customer interviewee especially brings out the risks of the current cooperative mode for the customer organisation and the importance of personal level trust between the key persons of the relationship.

*"In the last steering group meeting, where we contacted our operational processes online (...), I said, well, this is something—you just control our processes from [the university], not many of [the new owners] would approve of that (...). They could say 'no way!' I have been thinking that it does not harm us, even if someone sees our results and follows the process; it does not harm our production. I would never believe that [the university] would twist that [information] (...). But we have been rather careless in giving all our information to others. I have been thinking whether we should be a little bit more strict, but I guess that as long as those two [key persons from the university] and [a key person from the supplier] are along, I fully trust that the information will not be misused. But it has crossed my mind that someone might do so (...) Once more, no, I don't think that these fellows I know would [misuse the information]. But there might be someone new who does not understand this and who does not know the background—that this has been based on complete trust". (Manager, Customer)*

Perhaps the forthcoming leave and other changes at the customer organisation led that person to reflect on the past and the future of the co-innovation relationship and bring out those views

even to an outsider – some other person might not have done so even in a similar situation. The question then arises of how well the other customer interviewees were aware of these views, and if they were, why they were overly positive about the relationship and the projects. It is possible that they felt that they were not in a position to present critical views or that they felt they were following the “positive relationship story” built into the customer organisation. That in turns supports the idea that, on an organisational level, the co-innovation relationship was perceived valuable.

#### *4.5 Summary of empirical findings*

Clearly, then, even when taking account of the presented critics, all of the actors perceived the co-innovation relationship as well as the examined projects as highly valuable for them but did not provide explicit clues for the origins of that value beyond the investments and outcomes discussed earlier. It seems that the perceived value of the co-innovation relationship is greater than the data directly reveals and therefore we had to read in between the lines to explore the contextual, temporal and subjective aspects of experiential value (see Table 2).

Table 2. Subjective, temporal and contextual aspects of experiential value in co-innovation relationships.

Aspect	Explanation	Implications
Subjectivity	<p>Value is experienced by an individual.</p> <p>Actors’ experiences, relationships, personality, views, and history influence how temporal and contextual aspects are reflected in value perceptions.</p>	<p>Individuals’ experiences form the basis for project, team and organisational level, collective value perceptions that are vague yet carry some common elements when asked from different individuals. These collective perceptions are, however, tied to the individual drafting them.</p> <p>The way in which individual level experiences influence the collective perception depends on the inter-personal relationships and dynamics in the organisation.</p>



		<p>Trusting personal relationships is at the core of positive value perceptions in co-innovation relationships.</p> <p>The same relationship realises divergent value for each actor (individuals and organisations). Each actor evaluates value (and its sufficiency) from its own standpoint.</p>
Temporality	<p>Value perceptions are bound to the present time, but they reflect past and expected experiences.</p> <p>Perceptions change over time.</p>	<p>A long, successful relationship supports its own continuance as-is, provided major changes do not emerge.</p> <p>A single project of a long relationship is difficult to evaluate in isolation.</p> <p>The past of the relationship is transferred to the present and future experiences when long-term key individuals and new individuals in the relationship work together for some time, which helps transfer the inter-organisational (yet person-dependent) trust as well.</p>
Contextuality	<p>Actors' value perceptions are tied to their dyadic, triadic, or macro context (individual and organisational view).</p> <p>In the examined context, personal relationships, key persons, project teams, and the organisation are relevant aspects for contextual value analysis.</p> <p>Changes in the context may influence value perceptions.</p>	<p>The value of a relationship is always connected to the current contextual situation, such as individual's history in a relationship (individual level) or availability of alternative co-innovation partners (organisational level). On an individual level, for example, experiences of personal-level relationships or leaving the organisation might impact the reflections of value.</p>

In an individual's immediate context are the people working in a project and also the key persons in the inter-organisational relationship in the home organisation. These key persons often act in the project's steering group. When looking a bit further, project personnel from both organisations interact constantly. Through these relationships an individual is influenced by the experiences and opinions of others and together with the individual's own experiences, expectations and opinions, the individual's value experience is formed. Some individuals have more influence on others in an organisation, or even across organisations, than others (c.f., personal influence, Katz and Lazarsfeld, 1966). The impact of personal views of the relationship depends firstly on the amount and nature of the relationships of that person and secondly on the experiences of those influenced individuals. For example, critical views on a relationship spread by a key-person in a relationship might influence perceptions of the relationship in the organisation more than the views of some recently hired project engineer.

The value perceptions are likely to vary between individuals and between groups of people (such as project teams), but presumably, there is some level of coherence. We agree with the view that it is the individual who has the value experience. When looking at a group of people, someone must make sense of the experiences of others to explicitly form or articulate some kind of an informed overall value perception, when, for instance, making decisions concerning the continuance of the relationship. The questions then are of who makes sense of the relationship (which roots the perception to an individual), what motives there are for proceeding this way, and based on what kind of information. That emphasises the vague nature of organisational-level value perceptions. Even if one does not consider these findings surprising, contrasting this empirical evidence against the prevailing research on B2B relationships and their value, this subjective and relative nature of value perceptions has not gained the attention it seems to deserve.

Projects are a common part of inter-organisational exchange; both transactional and more cooperative. In the context examined here, project is an important device that brings different individuals together and creates a sphere of influence. Projects transfer experiences between individuals and between firms and influence the value experiences of the individuals involved. The history of the relationship is transferred to new, potential key persons of a relationship when the long-term key persons and new personnel are working together in projects. In that way, the past and the future experiences of a group of people get mixed with personal history and expectations of an individual.

## **5. Discussion**

This study examined what constitutes the value of a long-term co-innovation relationship. Based on our findings, the perceived value of co-innovation relationships relates to the co-innovation processes and their outcomes, as noted by prior literature on the topic, but there lies value in the functioning and mutually beneficial relationship itself, too, which is more difficult to grasp. To tackle that dilemma, we applied the experiential value concept, and our study elaborated not only on the subjective, temporal and contextual nature of experiential value, but pointed out its relative side - personal level relationships and projects act as devices that affect and transfer value experiences between individuals, groups of individuals, and organisations, even over time. Figure 2 portrays the individual value experience in the core of the co-innovation relationship value, but also illustrates the temporal, relational and contextual aspects of value in that context.

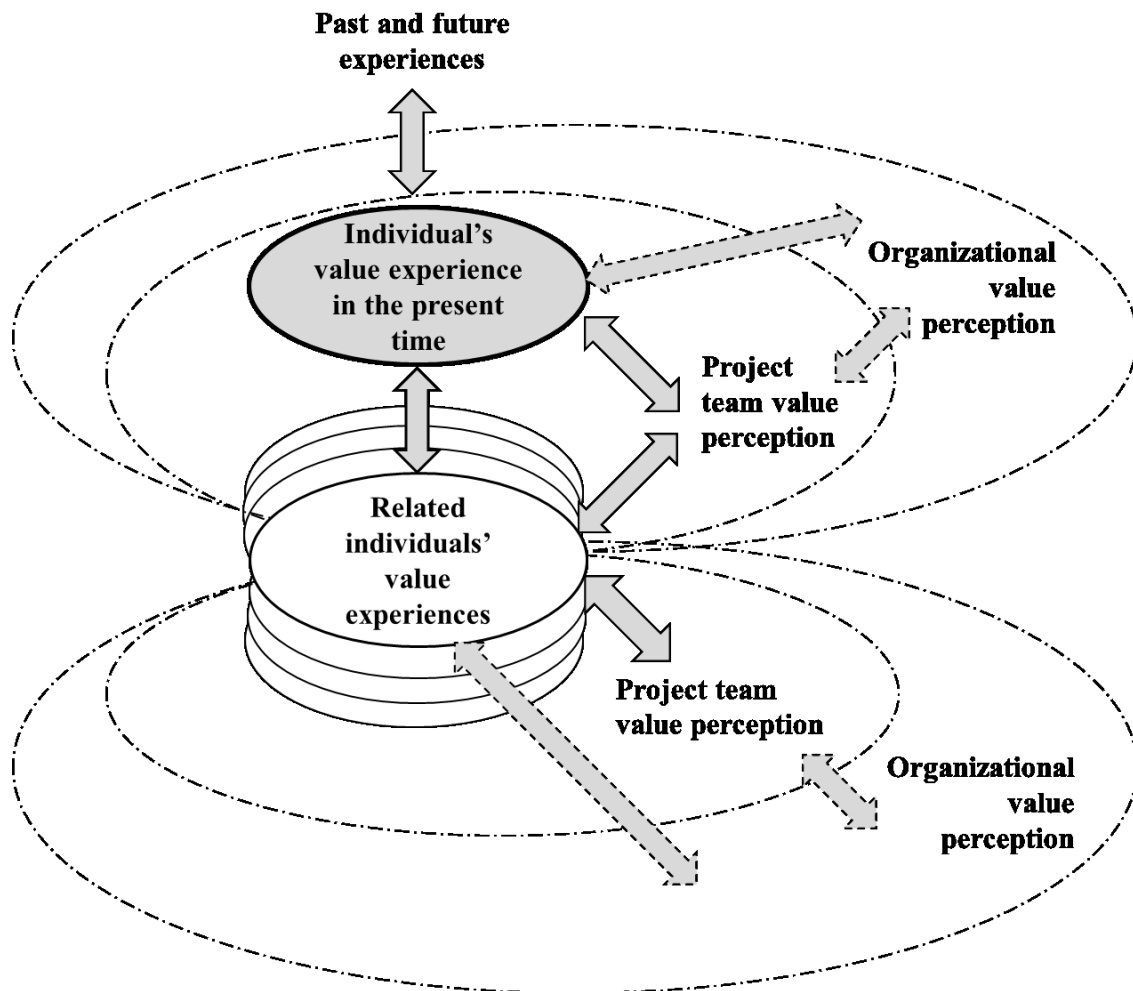


Figure 2. Experiential value in the context of long-term, project-based, co-innovation relationships from an individual's perspective.

Altogether, our analysis led to the following three conclusions. First, experiential value of long-term co-innovation relationships is subjective and relative. The value experience is always rooted on an individual but it is influenced by the dynamics between individuals working in the same project(s), in the same organisation and in related organisation(s). Outsiders to a relationship have difficulty capturing the value of a co-innovation relationship for an inside actor, because they do not share the insider's subjective experience, history, and contextual knowledge. In addition to subjectivity, our findings emphasise the relativity of such value

perceptions in the examined context. Projects bring together a group of people and transfer experiences between people and organisations. In addition, key persons in a relationship transfer experiences across time and people. In long-term relationships, common history, shared memories, and past experiences perceived by the key persons are particularly influential, not only on the individuals' own value perceptions, but also other actors in the organisation, either directly or indirectly. On an organisational level, there cannot be said to exist "value experience", but someone can make sense of the common aspects of perceived value of a co-innovation relationship for an organisation from their own, particular viewpoint and for a specific purpose.

Second, the co-innovation processes and the functioning relationship, in particular, hold intrinsic value; that is co-innovation projects and their outcomes are not the only influences in the formation of value perception. The intrinsic value of an existing relationship centres on credibility, inducing a sense of safety, security, and trust, generating loyalty and mutually profitable relationships (Ravald and Grönroos, 1996; Walter and Ritter, 2003). Relationships endure over time as the credibility of other actors is experienced, and these experiences influence expectations. Accordingly, the perceived value of a *long-term* co-innovation relationship cannot be fully understood by examining one or even a series of co-innovation projects.

Third, project-level issues appear to play a relatively minor role in the value perception formation for a long-term co-innovation relationship, as the unpredictable nature of innovation projects is acknowledged, and project-level value perceptions take account of the entire relationship. A basic assumption is that positive project experiences are reflected in relationship-level perceptions. Based on our findings, we can add that positive perceptions of the co-innovation relationship enhance project-level value perceptions. The perceived value of

a single co-innovation project is difficult to comprehend in isolation. It also means that consecutive or serious project-level failures must take place in order to harm a strong, positive, relationship-level value perception. Strong and trusting personal relationships can compensate for value asymmetry between the actors or for situations that threaten trust (see also Blois, 2010). These personal-level relationships are important, since they hold co-innovation relationships together.

This study contributes to the discussion of experiential value by examining its aspects in a business-to-business co-innovation setting. First, our study replies to the call for more empirical studies exploring how perceptions of value are formed (Corsaro and Snehota, 2010). We elaborated the value of co-innovation relationships, following the relationship approach on co-innovation, which has been proposed by some authors (Davis and Eisenhardt, 2011; van Echtelt et al., 2008), but which has rarely been acted upon so far. Our study adds to the extant research by aggregating and organising the findings of previous studies and providing an added multi-faceted framework for experiential value of co-innovation relationships, emphasising subjectivity and relativity of value experiences in the examined context. In addition, it does not focus solely on the customer-perceived value, unlike most of the existing research (e.g., Blocker, 2011; Lapierre, 2000; Palmatier, 2008).

Second, this study extends discussion of the emergent and actor-specific value of business relationships by illustrating the central role of an individual and the surrounding relationships in this context. Based on our findings, we suggest that the experiential value concept can help analyse the value of inter-organisational relationships especially in contexts, where the value of cooperation might not be immediately evident, but is seen in the future. The extant research (e.g., Möller and Törrönen, 2003; Palmatier, 2008; Walter et al., 2001) has focused primarily on finding value elements in order to explain the value of divergent relationships. The findings

of this study support our assumption and the findings by Corsaro and Snehota (2010) that these kinds of categorisations offer only a partial, and perhaps too rational and organised, view of the relationship value.

Third, we recommend a multi-level approach for analysing long-term co-innovation relationships, enabling these relationships to be managed effectively. Since we found pre-existing relationships to hold intrinsic value and to influence project-level perceptions of value, we suggest that value must be examined firstly at a relationship level (see also Ravald and Grönroos, 1996) when co-innovation efforts are not a one-off or new to the participating actors. For example, the concept of supplier-customer co-innovation itself already assumes a pre-existing relationship. In addition, we propose more emphasis on personal-level perceptions, which eventually guide business managers' activities in relationships (e.g., Meindl et al., 1994).

The present findings carry three main implications for business practice. First, instead of the typical focus on co-innovation project- and outcome-level (financial) assessment, assessment of individual level value experiences of the involved personnel (project team) is suggested at the level of co-innovation relationships. The personnel actually working in a project are the most important informants for such value assessments, since they have first-hand experience of the project and on the current state of the cooperative relationship. Because of the subjective nature of experiential value, soft methods such as interviews with key individuals of a firm's co-innovation partners play an important role in understanding common elements of individual-level value perceptions.

Second, while major changes in a relationship or its context may disrupt the relationship and trigger reconsiderations of its currently accepted state and (sufficiency of) value (see Blois, 2010), in the case of long-term co-innovation relationships, it is important to pass on the

experiences and the trusting relationship to new individuals in the organisation by actually working together in projects for some time.

Third, even when it seems that one actor is investing more and benefiting less than the others, this may not threaten the co-innovation relationship because of the past or future value of the relationship or the mutually accepted state of the relationship, for instance. This is particularly true if the sacrifices made have not been great in the first place and the opportunities to acquire new co-innovation partners are limited. It is important to understand *what constitutes value* for each actor in the co-innovation relationship from its own viewpoint and, importantly, in the long run.

The scope of this study imposes some limitations. As mentioned, the supplier-customer relationship is unique, and the context of the study was specific in representing long-term triadic public-private collaboration, where the head of the co-innovation project was a university because of the research-and-innovation orientation of the projects (for importance of these types of relationships see also Iskanius and Pohjola, 2016). However, the key issue in the findings is the trusting personal-level relationships of long duration, and not the specific context. Therefore, these preliminary findings could be transferable to other project-based long-term cooperative research and innovation relationships. Typical supplier-customer co-innovation is perhaps more development-oriented than the projects examined here, and our findings, for example, about the limited role of project-level value might not be found in such relationships, where the focus is more on short-term outcomes. Therefore, instead of discussing co-innovation in general, the type of co-innovation efforts and relationship need to be acknowledged in further studies. Obviously, it would be necessary to explore the value of co-innovation relationships in other contexts, such as pure business-to-business, without the involvement of public parties (Nissen et al., 2014), or in different types of industries.



We invite further studies to utilise and develop our multi-level framework on understanding co-innovation relationship value and the experiential side of business-to-business relationships in general. The potential temporal influences on how value perceptions are formed at different development phases of a relationship could be further examined based on longitudinal data. That would help to understand if there are patterns in what aspects matter at different phases. Our results suggest that it is not always valid to work towards forming objective value perceptions on an organisational level because of the subjectivity of perceptions. Therefore, it would be interesting to study practices of how value perceptions are combined and used in making decisions about co-innovation relationships in organisations.

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