

SCREEN-SHARING IN STORE
THE CONSTRUCTION OR DESTRUCTION OF SHOPPING VALUES

Yonathan Silvain Roten

Panthéon-Sorbonne Paris I University- France

Interdisciplinary Research Pole in Management Sciences (PRISM Marketing)

Email: ys.roten@gmail.com

Régine Vanheems

IAE Jean Moulin Lyon 3 University - France

Magellan Research Center in Management

Email: regine.vanheems@orange.fr

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Le partage d'écran en magasin

Une construction ou destruction de valeurs de magasinage

Résumé

Cet article vise l'identification des valeurs de partage d'écran des consommateurs, échangeant avec un vendeur autour d'un même écran. L'analyse qualitative a identifié des **valeurs** 1) **instrumentales**, accentuant la perception de *facilitation ou complication* de la tâche; 2) **de lien social** soulignant des *collaborations positives ou négatives* 3) **d'expression individuelle** associée à la «*transparence*» de l'écran ou contrairement à une perception «*de liberté d'action limitée*». L'utilisation conjointe de l'écran apparaît exacerber ces dimensions, **amplifiant une construction ou destruction des valeurs**. Cette étude, révélant avantages et inconvénients du partage d'écran pourra contribuer à promouvoir son utilisation plus judicieuse par les vendeurs.

Mots-clés : «Partage d'écran», «Shopping phygital», « Valeurs de magasinage», «Pratiques de vente», «Distribution omni-canal»

Screen-sharing in store

The construction or destruction of shopping values

Abstract

This article aims at identifying consumers' values of screen-sharing, while discussing with shop assistants around the same screen. The qualitative analysis identified 1) **an instrumental value**, emphasizing task's *facilitation or complication* perception following this practice; 2) a **social-link value** stressing *positive or negative collaborative* aspects 3) **an individual-expression value** related to screen's '*transparence*' benefits or conversely, to a '*limitation of freedom of action*'. The screen's joint-use appears to intensify these dimensions, **amplifying the construction or destruction of shopping values**. This study revealing 'phygital' benefits and deficits of screen-sharing practices may contribute to promote a subtler use by shop assistants.

Keywords: « Screen-sharing», «Phygital joint-shopping» «Shopping values», «Selling practices» « Omni-channel retailing »

Executive Summary

While shopping on the web with somebody else physically present (in the same spatial and temporal dimension and at the same screen) has become a usual activity between friends and relatives (e.g., with spouse, with children, with parents); surfing with a commercial representative is still less frequent in a B2C context¹. Whereas Brick and Mortar retailers began to be concerned by the growing share of purchasing online, they first developed their own online channels. Subsequently, Self Service Information Technology (SSIT) was introduced in the stores with the appearance of digital kiosks. Glérant-Glikson and Feenstra's (2017) recent study about SSIT, revealed their functional values, including information, efficiency and reinforcement, as well as their interactive values, encompassing autonomy and recreation. Interestingly, quite similar dimensions, which we coined as "*instrumental, social and individual*" values, appear in our analysis of the screen-sharing shopping activity².

Nowadays as multiple channels are used in the same shopping journey successively and even simultaneously thanks to the spreading of smartphones and other personal digital devices, retailers have adopted an Omni-channel strategy, encompassing the introduction of screens in their physical stores. Retailers have also provided digital devices to their sales' teams in stores in order to improve the customer service efficiency and quality. However, the question whether a shop assistant needs to surf jointly at the screen with the customer during their interaction, or alone, was not addressed by the managers before supplying the digital tools to their teams. In fact, very little attention has been granted to this topic, neither by academics nor by retailers. Nevertheless, understanding first the customers' perceived benefits of a shared stage on the screen with a shop assistant appears to constitute a prerequisite step.

The purpose of this paper is to understand which customer's benefits result from a screen-sharing activity with a shop assistant. Shopping jointly has been acknowledged as having a positive impact on sales volume (Granbois, 1968; Mangleburg et al., 2004; Sommer et al., 1992; Woodside and Sims, 1976). However, according to Borges et al., (2010), it may depend on the expected benefits for the consumer as well as on the identity of the partner. Belk (2010) argued that the general process of sharing and its meaning is different, depending on what is shared and with whom. Subsequently, one can presume that shopping at the same screen with a friend, a relative or a store representative could affect also the intensity of the perceived shopping values of the screen-sharing activity.

Screen-sharing activities with a shop assistant/ with a private partner (Images: Thinkstock)



¹ The screen-sharing practice between commercials and company buyers (B2B) seems to be more pervading

² Besides the social-link value related directly to the intrinsic interactional orientation of screen-sharing practice encouraging cooperation and socialization

This paper aims at contributing to retailers' "hybridization³ strategy" (Belghiti et al., 2017) in their physical stores, by understanding consumers' screen-sharing phygital⁴ experiences (Armstrong, and Rutter, 2017) with shop assistants in stores. In fact, our study reveals that customers may conceive a sharing activity with a shop assistant as a gain or loss of benefits. Since the results of our research underline a possible negative or positive 'amplification effect' on the three values axis that arose (instrumental, social and individual); screen-sharing activities can be considered as a dangerous two-edged knife practice. Therefore, this shared activity needs to be used with parsimony by shop assistants understanding that it can either contribute to the construction of additional shopping values or conversely cause their destructions.

A positive or negative valence of the shopping values following a screen-sharing activity seems to appear according to the **customers' acceptance or rejection of their perceived level of dependence** (Kelley and Thibaut, 1978) in the process. The emergence of an individual expression dimension in a screen-sharing process underlines the somewhat contradictory expectations of personal empowerment of the customers in the process, together with collaboration and practical values. Thus, enabling shop assistants to identify the appropriate way to share a screen with a specific customer is an urgent and mandatory step. Actually, previous findings (Roten and Vanheems, 2017d) stressed the importance of the perceived "balance of competence" between the customer and the shop assistant, assessed in a first verbal interaction. The customer's relative perceived "shopping status" stemming from different sources of power (Raven, 1965) shapes his acceptance or refusal of distinct levels of dependence in the screen-sharing process, determining a perceived amplified gain or loss of shopping values in each of the uncovered dimensions. Whenever the customer's relative assessment of the shop assistant's higher competence (Roten and Vanheems, 2017d) and shopping status is accepted, a perception of dependence in the screen-sharing process can be perceived by the customer as allowing an increased construction of shopping values. Otherwise, the customer's non-accepted position of dependence toward a shop assistant in a screen-sharing practice could induce an amplified destruction of shopping values.

Subsequently, comprehensive training of shop assistants, granting them the ability to find the subtle compatible balance of interdependence with each customer in their screen-sharing process, could yield positive values in each of the three dimensions as well as bestow more satisfaction.

In fact, this study suggests to retailers that **there is more than one role that a shop assistant can adopt in a screen-sharing process with a customer**. Like in a computer supported collaborative learning process in a classroom, sharing a screen with customers in a store can be conducted by the shop assistant through different roles⁵. Nonetheless, it needs to be adapted to the "*social power*" perception of the customer in the specific interaction with a shop assistant for a specific product in order to prevent frustration leading to destruction of shopping values'.

Summing up, by acknowledging customer's values and their determinants while sharing a screen, this article could contribute to sensible seller's training programs about phygital screen-sharing practices in stores with customers (Roten and Vanheems, 2017b). To know how to choose the most appropriate screen-sharing roles before surfing with a customer may stimulate the customers' positive construction of shopping values as well as increase the shop assistant's sales volume.

³ The optimal integration of digital devices into physical retail stores

⁴ A physical and digital activity occurring at the same place and at the same time

⁵ For instance, through the "teacher", the "peer" or the punctual "facilitator" role

1. Introduction

Nowadays, the pervasive use of screens (anytime, anywhere, any devices -ATAWAD) has generated new forms of interpersonal interactions 'around the screen'. Shopping at a screen together with a friend or a relative at the same spatial and temporal dimension (same place, same time, same screen) has become more frequent. In the last years, retailers made large investments in order to introduce digital screens in their "brick and mortar" stores. Thence, shop assistants have been increasingly equipped with digital devices in order to be more efficient in their service, using them also during their face-to-face interaction with customers (Vanheems, 2012,2013). While authors' previous researches (Roten and Vanheems, 2017a,b,c,d; 2018) addressed the motivations of consumers to share a digital device with a private partner (friend, relative) and with a commercial partner (shop assistant); no researches were carried out on the values resulting from this new phygital practice in stores. The only body of research having focused on similar questions is related to educational studies. CSCL (Computer Supported Collaborative Learning) researchers have regarded the computer role in a co-located learning process as a *mediational facilitating resource* (O'Malley, 1992; Roschelle and Teasley, 1995), contributing not only to interpersonal coordination, but also to instrumental cognitive aspects⁶. To understand whether their findings may be extrapolated to the values resulting from a joint-surfing stage with a shop assistant⁷ and whether other values would emerge is the objective of this paper. Moreover, this study can contribute to sale staffs' practices, sensitizing them to the potential gain or loss of value perceived by the customers, and allowing them to decide when it is appropriate to introduce it or not, and in which way. This paper is structured as follows. After an interdisciplinary analysis of the literature, the qualitative methodology is exposed. Then, the paper presents the main results, discusses them and explains their theoretical implications, managerial contributions and limitations.

2. Conceptual framework

Whereas 'sharing a screen' constitutes today a new form of "shopping together", no specific researches focusing on its values has been conducted. In a private context, Durand-Mégret et al.'s, (2016) research investigated the reasons leading teenagers to surf with their parents, whereas Berrada (2014) analyzed the decisional processes of a couple during their purchase together at a screen. In a commercial context, screen-sharing experiences between customers and shop assistants have been voiced as having a potential to generate feelings of connivance (Vanheems, 2012, 2013). Consequently, since, there is a lack of research on shopping screen-sharing values in marketing, the literature review below first addresses the identified values of "joint-shopping" in store. Next, the issue of "*servuction and service co-production*" (Vargo et Lusch, 2004) and their relevancy in screen-sharing processes are discussed. Finally, the main findings of the CSCL body of research about the benefits of sharing a screen are presented.

2.1. Joint-shopping: which shopping values?

Similarly to the study of Babin, Darden and Griffin (1994) about shopping values, "joint-shopping" was acknowledged as generating utilitarian values (Furse, Punj and Stewart, 1984) and hedonic values (Arnold and Reynolds, 2003). More precisely, this joint practice with a 'shopping pal' was reported as reducing risk perception, helping "*to cope with anxiety and stress in a meaningful decision process*" (Hartman and Kiecker, 1991), as well as socially enjoyable thanks to the sharing of shopping emotional experiences (Matzler et al., 2005; Lim

⁶ The social aspect is designated as 'off-task collaboration,' the instrumental aspects as 'on-task collaboration' - For an enlarged explanation on CSCL values, see Appendix 1

⁷ We consider that both for an educational task and shopping task in a screen-sharing practice; the facilitated completion of the task is one of the goals of the student or the consumer, even if only one actor will be active at the screen ordering products or resolving exercise's answers.

and Beatty, 2011). Nonetheless, the identity of the shopping companion appears to affect the experience the customer lives (Borges et al., 2010), inducing distinct intensities of utilitarian and hedonic values according to the ties between the dyad⁸ and their socio-demographics characteristics⁹. In fact, companion shoppers were acknowledged as carrying out "*many duties traditionally performed by the retail salesperson*" (Lindsey-Mullikin, and Munger, 2011).

2.2. *Servuction: a question of auto-production and co-production level?*

In a commercial context, studies on co-production of services between the organization and its customer emphasized three basic components in this joint process (Langeard and Eiglier, 1987), including the customer, the medium and the stores' associates. More recently, Vayre (2011) defined consumption as a co-elaborated activity, allowing the consumer to enhance his freedom of action (Foucault, 1980) resulting in higher involvement in the service process. In fact, while sharing a screen, the level and characteristics of the customer's participation in the service process (Goudarzi and Eiglier, 2006) may drive either to a visual, verbal or kinesthetic service co-production. In the perspective of "*screen-sharing servuction activities*" in a commercial context, the values generated by the joint use of a specific screen-device could depend also on the tool's intended "power distribution design" (Latour, 2006). On the other hand, the values of Self Service Technology (SST) in retailing stores were also investigated. Mencarelli and Riviere's (2014) study on this topic shed light on a specific "*autonomy*" benefice as well as specific "informational, relational, ethical and equity" costs, while being alone facing the machine. However, Lapassouse-Madrid and Vlad's (2016) recent study about stores digitalization detected a possible creation or destruction of values both for customers and retailers.

2.3. *From efficiency facilitation or complication at the task: the gain or loss of cognitive value*

Educational scholars were pioneers at studying screen-sharing values. They tried to understand the benefits of combining learner(s)-computer interaction and learner-learner interaction (Dillenbourg et al., 1996; Stahl, Koschmann, and Suthers, 2006). Face-to-face communication "*around computers*" has been regarded as a practice facilitating co-located collaboration between the students. Crook (1994) sets forth the idea that these kinds of interactions allow the participants to focus in a common goal when the task is displayed at the screen. He suggested that the shared screen has a '*facilitating function*', making face-to-face communication and disputes resolution easier and more efficient. In fact, the facilitated creation of "*a shared referent between the social partners*" (Dillenbourg et al., 1996, p.14), contributing to a more efficient completion of the task, was viewed as the result of the mediational effect of the screen¹⁰. Nevertheless, when a solution is not agreed, a cognitive conflict may loom, causing a complication in the completion of the task. In these cases, the learning partners may give up the joint process at the screen, or alternatively enters in a negotiation process (Piaget, 1964).

2.4. *From facilitating collaboration to complicating it: the gain or loss of social value*

In educational studies, collaboration is viewed as an efficient ways for active learning, due to the process of explaining and negotiating ideas it requests (Willis, 2015). Harris et al. (2009, p. 336) state that "*the benefit of collaboration for learning is dependent on children's level of participation in such activity*". When students share a classic PC, behaviors trying to exclusively control the mouse may surface. These individualistic anti-social behaviors based on competition, domination and control of the learning process yield to a non-collaboration dynamics (Noddings, 1985; Okey and Majer, 1976) and to the destruction of social values.

⁸ "*Strong ties companions*" are preferred when the aim is moral support (Kicker and Harman, 1994). On the contrary, "*weak ties interactions*" (Granovetter, 1973) are generated by the expectation of functional value

⁹ Gentina (2013) showed that going together to stores for adolescents is mostly related to social expected values

¹⁰ See the activity theory mediational principles (Leont'ev, 1981; Rubinstein, 1976; Engestrom 1993)

2.5. *Sharing a screen: the construction or destruction of socio-cognitive values?*

Most CSCL studies examined the dependent variables resulting from peer-based interactions at a (co-located) computer either in terms of cognitive values (acquisition of new knowledge and new cognitive strategies, task success) or of social values following the interaction facing the same screen (c.f. Mevarech and Light, 1992). While the first approach belongs to the cognitive learning "technology driven" stream of research (Lepper and Gurtner, 1989) according to Piaget's (1964) cognitive knowledge process, involving cognitive conflict and co-construction¹¹; the second approach investigated peer-computer interaction accordingly to the socio-cultural constructivism theory of Vygotsky (1978)¹². However, the main question remains whether we can extrapolate these results affirming either a gain or loss of social and cognitive values to screen-sharing situations between a customer and a shop assistant?

3. Methodology

The first step of this research carried out some anonymous observations of screen-sharing activities at home or in public places. Next, observations and mystery shopping visits were conducted in a few brand stores, advertising themselves as "*digital in store*" shops¹³ (i.e., where shop assistants use a screen in their selling process). Despite the fact that these observations enable us to observe various screen-sharing processes, it didn't allow appreciating the perceived shopping values of the customers. Thus, semi-structured interviews were conducted. Twenty French customers were interviewed about their shopping journeys (see Appendix 3- sampling). The interviews focused first on the lived experiences of the interviewees, in order to assess the distinct aspects of the shopping screen-sharing phenomena, its circumstances, modalities and values (see Appendix 4 - interview guide). However, for interviewees who didn't succeed to remember such an interaction with a shop assistant¹⁴, a scenario-based procedure was adopted. These respondents were required to project themselves into a screen-sharing scenario with a shop assistant they remembered. This request for projection was necessary in order to apprehend behaviors not yet experienced by all or not fully conscious. As a matter of fact, Luo's (2005) research drawing on Dahl, Manchanda and Argo's (2001) research; suggested that "*the effects of imagining a social presence on purchase behavior can be similar to the effects of an actual presence*" (Luo, 2005,p.290). Moreover, such "scenario" methodologies have been also applied also in research about couple's joint-shopping motivations (Lym and Beatty, 2011). Actually, these simulation techniques were quoted by Bateson and Hui (1992) as having advantages over retrospective, providing ecologically valid tests.

4. Results

The content analysis showed that three main categories of screen-sharing values designated as "*instrumental, social and individual*" values, emerged. These dimensions arose as positively or negatively intensified in situations in which the physical and virtual realms are embedded.

4.1. *Screen –sharing: an enhanced gain or loss of instrumental value*

Utilitarian values associated to screen-sharing practices arose as amplified. Some respondents mainly stressed the practical aspects of this hybrid practice emphasizing the facilitation value following thii sharing activity with a shop assistant - *If she has the product in stock, if it is not in stock, etc. If I can take it instantly or... the precise conditions of sale*" (PJ., 78). Others un-

¹¹ For a review on Piaget's (1964) cognitive knowledge process, see Appendix 9

¹² For a review on Vygotsky (1978) concept of "co-constructed learning experiences, see Appendix 8

¹³ For a description of the observations procedures, store' sample, observation grid and results, see Appendix 2

¹⁴ Only 11 (among 20) respondents succeed to recall a screen-sharing shopping interaction with a shop assistant. Whereas all respondents succeed to remember such a shopping interaction in the private sphere

derlined its cognitive value enabling to obtain simultaneously objective displayed information and subjective personal assistance *"But it's good to receive people's opinion, because sometimes...you can always buy stuff, and ultimately uh, it's not going to be like in the images"* (L., 16). The possibility to get a personal opinion and to see more functional information at the same time enabling a "double check" appears to reduce the customer's perceived risk (see verbatim in Table 1 and Table 2). However, this shared phygital activity can be also conceived as a useless waste of time when the practical benefits a consumer may experience from further interaction facing the same screen are not clear (see in Table 3). It seems that the perceived gain or loss of instrumental value is related to the customer's perception of the shop assistant's level of competence, having or not the potential to concede additional values (see in Table: 4)

4.2. Screen-sharing: an enhanced gain or loss of social link value

Social values associated to the collaborative process of shopping jointly at a screen surfaced in the interviews. In the private sphere, the discussions at the screen as well as the sharing of a physical artefact seem to reinforce social bonding: *"We look at stuff; I think I'll never get tattooed but sometimes we look at tattoos with friends and we discuss it"* (L., 16). Sharing verbally and visually around a screen was voiced in the interviews as a manner to create a more fluid communication. Social-link values seem to materialize following the creation of common values and shared decisions during the screen-sharing process (see verbatim in Table 5). However, this joint practice appears to have also the potential to complicate the communication process, leading to a destruction of social-link value (see Table 6). The fact that one can combine a mutual visual experience (looking together) with a verbal exchange (discussing together) while using one shared screen artefact (surfing together) seems to exacerbate the social-link value either in a positive way - *"there is a connivance in it"* (T.48) or a negative way - *"No, we do not surf together; it's a source of divorce!"* (M., 60). In the commercial sphere, sharing a screen with a shop assistant surfaced as having the potential to reproduce a 'homely ambiance of togetherness' (see verbatim in Table :7), spawning positive social-link values or conversely to be perceived as a *"very cold, unfriendly"*(T.,48) technical exchange.

4.3. Screen-sharing –an enhanced gain or loss of individual expression value

The transparency's effect of the screen as well as the perceived limitation of freedom while sharing a screen arose in the interviews as reflecting enhanced individual expression and protection values. Whilst individual expression might be negatively boosted in a screen-sharing situation perceived as limiting the freedom of action of the customers (see verbatim in Table 9); the transparency effect of the shop assistant's *'open screen'* arose as positively increasing individual control values. It emanated as allowing customers to follow the action of the shop assistant at the screen granting them feelings of higher reliability (see verbatim in Table 8).

5. Discussion, Implications and Conclusion

The content analysis identified three main axes of shopping values - **instrumental, social-link and individual expression** - while sharing a screen either with a private partner or a shop assistant. In fact, these dimensions already appear in the literature of marketing experiential values (e.g., Aurier et al., 2004; Evrar et Aurier, 1996; Holbrook, 1999). Whereas Holbrook (1999) distinguished between active and reactive modalities in their classification of experiential values, the actual active tendency of customers to participate actively in the services offered by the brands has created new sources of value either functional, temporal, social or hedonic-sensorial (Anteblian et al., 2013, Humeau-Feenstra, 2010). Stating that screen-sharing practice is *"carried out in the social world rather than in individuals' heads"* (Stahl, Koschmann, and Suthers, 2006, p.9); CSCL researchers theorized that the presence of the screen 'around' students in a classroom fosters social interaction, cooperation and mutual as-

sistance between them (O'Malley, 1992). As argued also by communication scholars (Wellman and Rainie, 2013) and in tune with a HCI¹⁵ sociological research (Oren, 2011), it seems possible to extrapolate that integrating a screen into “face to face interactions” may induce communication and collaboration (Fischer et al., 2002) as well as build affinity, also in a shopping context with private partners or with a shop assistant¹⁶. Additionally, the individual dimension stemming from the need of individual affirmation or protection within this shared practice appears to stem from Guido's (2006) additional individualistic shopping motives¹⁷. In order to develop a shared verbal and visual representations of understanding, in a situation of shopping screen-sharing, the mediation role of the technology interface may confer to the shopping screen-sharing partners the capacity “to self-regulate¹⁸ and co-regulate¹⁹ with other members both individually and as a whole” (Chan, 2012, p. 64). When the customer and the shop assistant succeed at it; a 'service dominant logic' (SDL) promoting co-creation (Vargo and Lusch, 2004) can be achieved with the successful integration of their mutual resources, and without any need for a cognitive conflict and reconciliation stage²⁰ (Piaget, 1964). However, whilst Giebelhausen et al.'s (2014) reported the negative or positive impact of technology on interpersonal exchanges between customers and frontline service employees, the screen-sharing practice surfaced as **intensifying positively or negatively all the three shopping values**. By highlighting enhanced instrumental, social and individual construction or destruction of values which haven't been acknowledged in joint-shopping literature, these findings represent a first theoretical attempt to identify screen-sharing phygital values in a commercial context between a customer and a shop assistant. Moreover, they emphasize an “individual autonomy” shopping value in screen-sharing practices allowing keeping a certain control thanks to the transparency that the shop assistants' open screens confer. Paradoxically, it may also result in the destruction of value, due to the customer's frustrating feelings of freedom limitation inherent to shared-screen practices. In a general perspective, when the problematic trap of power game at the screen is not avoided, a screen-sharing practice may result in a loss of value. Therefore, practitioners need to be aware of the impact of ‘power balance’ (French and Raven, 1959) in screen-sharing interactions, affecting the valence of consumers' shopping values. Similarly to the described collaborative learning approaches, a shop assistant would need to diagnose successfully in which cases he should adopt a distinct role while sharing a screen. As a matter of fact, a **'teacher role'** (with expertise perceived competence), a **'partner role'** (with symmetric perceived competence) or a **'punctual facilitator role'** (with informational perceived competence), as observed in CSCL practices, need to be adapted to the need of the customer. This research constitutes a first infrastructure filling the current lack of academic and professional knowledge in this field. Regarding its limitation, the costs (e.g., availability or other situational factor) stemming from the screen-sharing practice, were considered only as global costs (Aurier et al., 2004). Further work could describe the links between the screen-sharing values and the distinct consumers' screen-sharing modes and their motivations, considering the specific costs separately. Moreover, this study limited to an actor's monocular perspective²¹, could be expanded through a dyad interdependence²² approach, through a multiple interaction design, taking the shop assistants' impact into consideration.

¹⁵ Human Computer Interaction is a field of research, combining computer science, psychology and sociology

¹⁶ The 3 values seems amplified at distinct intensities with a private or commercial partner

¹⁷ Guido (2006) named them “enjoying being on one's own” and “freedom to decide” and claimed that there are new additional to the 11 shopping motives of Tauber's (1972) taxonomy

¹⁸ Self-regulation refers to an active, constructive process in which students set goals, monitor and evaluate their cognition, affects, and behavior (Chan 2012, p.64)

¹⁹ Co-regulation extends self-regulation encompassing cognitive and social dimensions (Chan 2012, p 64)

²⁰ Even if the partners have a same symmetric mix ability at the shopping task

²¹ While not considering the partner's/ shop assistant's insights

²² When “one person's emotion, cognition, or behavior, affects the emotion, cognition, or behavior of a partner” (Cook and Kenny, 2005)

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Appendix 1: The CSCL (Collaborative Supportive Computer Learning) body of research

Already from the 80th, and through the 90th, education academics (e.g., Blaye and Light, 1990, O'Malley, 1992) investigated the phenomenon of children peer collaboration and tutoring in computer-based tasks. At this time, since the presence of computers in classes was less pervasive, children often work jointly at the same computer. The CSCL body of research combining educational and learning studies approach with computer science basics, have developed rapidly. CSCL researchers described this practice as an interaction "around the screen"(e.g., Crook, 1994; Angeli and Tsaggari, 2016); supporting a social construction of knowledge (Rutten, Van Joolingen and Van der Veen, 2012).

A cognitive facilitation effect

CSCL researchers (c.f. Roschelle and Teasley, 1995) have explained the *cognitive facilitation effect* by pointing out the computer mediation role contributing to the disambiguation of verbal language (i.e., object pointing replacing the missing shared vocabulary) and encouraging conversational turns between students (e.g., through the use of the mouse or the touch screen). At the same time, the co-located setting still allows non-verbal body language (gesture and eye contact) improving shared understanding and increased efficiency at the task (Roschelle and Teasley, 1995).

A social facilitation effect

CSCL researchers (e.g. O'Malley, 1992) reported that the main benefits resulting from this co-located shared activity at the screen, is that it supports *both the communication and the joint activities*. In their research about young children collaborative interaction in educational computer environments, Shahihrim (2001) described collaboration as practices directly related to the notion of joint and mutual activity. Nonetheless, various computers properties and features might create more or less active roles, with more equitable participation and learning benefits from the collaborative interaction. Actually, numerous educational research (e.g., Littleton and Hakkinen, 1999; Lomangino, Nicholson and Sulzby, 1999) showed that an appropriate interface technology induces more enjoyment and less "conflict" behaviors among children. However, antisocial 'control' behaviors appear to generate a passive and disengaged behaviors of the other children, being marginalized (Pal, 2006). Additionally, Shahrinin, and Butterworth (2001) stressed the importance of mutual friendship between collaborators, along with preexisting computer competency and positive attitude towards computer in shaping the extent of participation in the activity. They suggest that it can promote mutual understanding of turn-taking system and generate an enjoyable environment

What seems essential to distinguish notwithstanding, remain the fact that whereas cognitive conflict has the potential to lead to the co-construction of an accepted decision (Piaget, 1964), behavioral conflict is reflected by an anti-social behavior, trying to control and act individually at the computer.

Appendix 2: Store's observation sample and procedure

Six distinct retailing stores of durable goods have been chosen in the commercial observation sample. Their choice has focused mainly in chain stores, pioneer in new retailing concept in-store (Apple store, Darty, Fnac, But). In order to add diversification in the store's sample, a "pure-player" furniture retailer that have opened his first connected store in Paris (Milibootik) was also added. These brands have been chosen following retailing reports news release about their connected practice in store involving a shared navigation between shop assistants and consumers. Moreover one retailing brand in the sample (Darty) have been the object of numerous mystery visits in distinct branch as well as in different hours, to try to control the store rushing hours and shop assistants variable (See table below).

Store's observation sample and procedure

Observed themes	Digital tools characteristics and category	Date and time	Atmosphere of the touch point in store	Screen - surfing Initiative/role	Physical position and place/time spent at screen-sharing	Digital tools characteristics and category
Retailer Brand and address	Apple store Paris Opera 75008	Darty (3 times) Beaugrenelle 75015	Darty Passy 75016 (2 times)	But Wa-gram Paris 75017	Miliboo Paris Reaumur 75002 (2 times)	FNAC -La Defense 92000 (2 times)

The observation grid was designed according to the A x 4 ethnographic methodology of Paul Rothstein (2000) focusing to four main activity elements - Actors, Activities, Artefacts and Atmospheres (i.e., the 4 A). The main results are displayed in the observational grid below

Store's observation grid - Observation and simulation (Mystery visits- April 2015)

	Retailer Brand and address (date/ hour)	Atmosphere of the touch point in store	Screen - surfing Initiative/role	Physical position and place/time spent at screen-sharing	Digital tools characteristics and category
1	Apple store Paris Opera 75008 14.04.2015 16.00 17.04.2015 18.00	Crowded	Yes directly on the digital tool that the customer want to check	Standing position- side by side near the presentation tables where the tools are. The customer is more ahead than the shop assistant, manipulating the device with the instructions of the shop assistant. - Time spent in the screen sharing interaction: about 12 minutes	On the digital tool the customer is checking
2	Darty Beaugrenelle 75015 12.04.2015 10.00 12.04.2015	Usual	No shared surfing initiative, refusal of the shop assistants to surf together on the site of the brand	Standing position- 1. At the shop assistant station: the customer is on the side or behind the shop assistant, when they are checking alone and the customer can choose to look passively at the screen.	1. Personal tablet of the shop assistants hanging on their neck 2. Open screen computer at the shop assistant work station

	13.00 12.04.2015 18.00 17.04.2015 15.00 17.04.2015 16.00			- Time spent in the screen sharing interaction: about 6 minutes 2. The shop assistant uses alone their tablet in face of the customer. The screen is closed to the customer - Time spent in the screen sharing interaction: about 3 minutes	
3	Darty Passy 75016 18.04.2015 19.00 19.04.2015 9.30	Usual	No shared surfing initiative, refusal of the shop assistants to surf together on the site of the brand	Standing position- At the shop assistant station: the customer is on the side or behind the shop assistant, when they are checking alone and the customer can choose to look passively at the screen. - Time spent in the screen sharing interaction: about 5 minutes	Open screen computer at the shop assistant work station
4	But Wagram Paris 75017 19.04.2015 11.00	Relatively empty	No shared surfing initiative, refusal of the shop assistants to surf together on the site of the brand		1) Digital Kiosk with a button " call the shop assistant- Automatic answer that no shop assistants are available for the moment 2) No open Wi-Fi connection – just a catalogue
5	Miliboo Paris Reaumur 75002 20.04.2015 15.30 22.04.2015 18.15	Relatively empty	Yes directly on the digital kiosk	Standing position: Side by side - the customer is invited by the shop assistant to surf when he is staying at the beginning near him. - Time spent in the screen sharing interaction: about 8 minutes, then autonomous, then shared again: about 10 minutes	1. Digital Kiosk 2. Wall digital screen 3. Public Tablet
6	FNAC La Defense 92000 21.04.2015 14.00 16.00 18.04.2015 10.00 12.00	Crowded	No shared surfing initiative	Standing position- At the shop assistant station: the customer is standing behind the shop assistant that is sitting at a bar chair in face of his work station. He is checking alone and the customer can choose to look at the screen. Time spent in the screen sharing interaction: about 3 minutes	Open screen computer at the shop assistant work station

Appendix 3: Interviews' sampling

Our sampling choice, based on diversification (Glaser and Strauss, 1967: 50-63, Michelat, 1975: 236) aims to achieve theoretical saturation threshold (Glaser and Strauss, 1967).

External diversification has been achieved by interviewing men and women from distinct socio-economic level and familial situation. Internal diversification (Poupart et al., 1997) focused into respondents, leaving with a partner or/and with grown up children, which have experienced more numerous and various situations of screen sharing interaction with their family.

	Age	Birth place	Home town	Profession	Living situation	Gender
R1	48	Togo- Africa	Paris	Psychologist	Married + children	F
R2	18	Surenne	La Rochelle	Student	Bachelor, living with his parents	H
R3	60	Surenne	Anthony	Architect	Married + children	H
R4	39	La Rochelle	Bois Colombe (92)	Journalist	Divorced + children	F
R5	38	Joinville Manche	Bois Colombe (92)	Journalist	Divorced	H
R6	60	St Jean d'Angely	La Rochelle	Ludothecary	Married + children	F
R7	23	Luxembourg	Saint Cloud(92)	Student	Bachelor - living alone	H
R8	55	Paris	La Rochelle	Producer	Married + children	H
R9	55	Luxembourg	Paris	Cartoonist	Divorced	F
R10	60	Strasbourg	Paris	Teacher	Married	F
R11	34	Strasbourg	Paris	Journalist	Married + children	H
R12	27	Nice	Messe	Speech Therapist	Bachelor - living alone	F
R13	56	Paris	Paris	Accountant	Married + children	H
R14	48	Alger Algeria	Neuilly sur Seine	Surgeon	Living with his partner	H
R15	56	Marseille	Courbevoie	Building keeper	Divorced + children	H
R16	16	Paris	Palaiseau	School girl	Bachelor, living with his parents	F
R17	78	Reaux - Charente Maritime	La Rochelle	Retired	Married + children	H
R18	79	Déllys - Algeria	La Rochelle	Retired	Married + children	F
R19	59	Casablanca Marroco	Issy-les-Moulineaux	Accountant assistant	Married + children	F
R20	39	Strasbourg	Issy-les-Moulineaux.	Communication / Education	Married + children	H

	<u>Men</u>	<u>Women</u>	<u>Bachelor</u>	<u>Married + children</u>	<u>Divorced + children</u>	<u>Divorced</u>	<u>Retired</u>
	11	9	4	5	5	4	2
<u>Percentage</u>	55%	45%	20%	25%	25%	20%	10%

Appendix 4: Interview guide and content analysis procedure

First, the respondents were required to describe a recent shopping experience in store in order to understand their shopping orientation, and more especially their attitude toward shop assistants. Then using a funnel methodology, they were asked about their shopping digital habits, before, during or after visiting a store. Finally they were queried about their “*joint shopping experience*” while facing the same screen in the private or/and in the commercial sphere. The objective was first to identify general values of screen-sharing wherever and with whom-ever it occurs, and then to feature their unique characteristics while surfing at a same screen in a store with a shop assistant.

1. Presentation and Method

2. Part One - Open Interview - Non-directive and narrative (Store purchase experience)

3. Part Two - Semi-structured

Theme A: Preliminary information search before purchase / consumption

Theme B: The seller in store

Theme C: The use of a digital device in store (From narrative to projective)

Theme D: Stories of shopping screen sharing with friends and family members. (From narrative to projective)

Theme E: Stories of shopping screen sharing with shop assistants at the point of sale (From narrative to projective)

4. Remarks, conclusion and thanks

The interviews has been recorded and fully transcribed. A content analysis has been carried out according to the methodological recommendations of Evrard et al., (2009). A pre-analysis consisting in selecting the corpus to be analyzed (interviews) and its meticulous reading has been performed following the instructions of Bardin, (1977). Then an encoding step was carried by choosing and defining the presence of sequence of phrases having "a complete meaning in themselves" as "units of meaning" (Unrung, 1974) A categorization, organization phase and classification process of the corpus was performed when a set of significant units of record (the codes); were grouping by analogy of meaning and sorting based on the criteria of the entire encoded material. Finally, a process of reorganization of classifications and interpretation by inferential process led us to an open model.

Appendix 5: Enhancing screen-sharing instrumental values

The instrumental dimension including both practical and cognitive value appears to relate either to a perceived facilitation or complication in the completion of the shopping carried out at a screen with a shop assistant. Moreover the relation's quality and ability mix of the actors, as well as the level of complexity of the task (products' category) could also affect the intensities of the resulting values. In a screen-sharing interaction between a consumer and a shop assistant, sales representative may choose whether to articulate it as 'tutoring-oriented' or within a "cooperative co-construction" scope, assuming symmetric mix ability at the task.

However, whether it is the initiative of the shop assistant or the customer, this screen-sharing activity enabling the shop assistant to give more precise and exacts answers to the customer can be perceived as very useful. In this case, the digital online screen-devices work as facilitator's artefacts medium increasing efficiency in the task due to its simultaneous verbal and visual aspects.

Table 1: An enhanced practical positive effect due to the shop assistant's screen-sharing initiative

<i>"I ask a question and she answers me more easily" (PJ, 78)</i>
<i>I went to Darty's store, the guy said "yes, there is a difference because ..., because ..., but wait we will look ... because I will have more technical details on the computer. Well, I find that very good. So it is him who does the research and me who associates with him. (M., 60).</i>
<i>"A Bose speaker I think yeah, we looked at things like that, the availability in the other stores if he didn't have it available. We looked at it (on the screen) in real time"(D.,55);</i>
<i>"We were looking for information on a product or additional information that he doesn't have, it is usually for that" (PJ., 78)</i>
<i>"Ideally, I'm asking a question and the shop assistant understands the question, explains to me that he's going to look for it with me on the Internet" (P., 55)</i>

Table 2: An enhanced practical positive effect due to the customer's screen-sharing initiative

<i>"It's better to have a visual support than to say "so here it is, a dress with a knot, with little flowers, with I-know-not-what", it's better to have a visual support" (L.,16)</i>
<i>In general, he (the shop assistants) have the reference of the product so it helps them rather than telling them" I am looking for furniture that looks like this", no it's directly the image on the smartphone with the image of the product, so he can go search directly on his computer, uh ... whether he has it or not and in which place..., so I think it helps them quite a lot " (S., 27)</i>
<i>"It's the seller, I'll tell him "I saw ... I've seen it on the internet" (M.,60).</i>

Table 3: An enhanced practical negative effect

<i>"He (the shop assistant) cannot explain to you what are the differences between the products, I think it's not interesting"(to go with him on the screen)" (S., 59)</i>
<i>"At the limit, you have to tell the shop assistant everything, so <u>it does not have any interest (to go with him on the screen)</u>" (M., 48)</i>
<i>"Everyone is doing the same research pretty much " (M., 18)</i>
<i>Finally, they (the shop assistants) make me waste time. They give me no additional information"(H., 60). "I think uh, it's wasting time actually ... because ..., 'end, because of my passed experience actually ... in contact with the shop assistants "(M., 40)</i>
<i>"It (shared navigation with a shop assistant in store) seems to me not necessarily incongruous, that is to say, but that, I can do it without him, I do not need him "(H., 60).</i>

Table: 4 An amplified gain of value loss of cognitive value linked to the competence perception of the shop assistant

<i>"There are salespeople with whom... we feel that it is not ... However, there are others, if we take the time to discuss, we feel that the person really knows his job well" (JB, 38).</i>
<i>"If there was a competent shop assistant who knows how to really refer me to reference sites corresponding to the products, that may interest me" (S., 59)</i>
<i>"I expect) that he (the shop assistant) has more knowledge than me and then he can help me to clarify; finally expecting that he will teach me something" (D., 34);</i>
<i>- if it's actually..., if the seller is ... "clean" and precise; and say that we have to go and search this or that because we want to know if the component is there, I think it's good" (D., 24)</i>
<i>"He has the skill, that is to say the ability, the ability to access faster than me, since he has the skill and the experience and knows where to find the information to access it..."(P., 55)</i>

Appendix 6: Enhancing screen-sharing social values

In the private sphere, the question, whether sharing a common activity on a physical object- *Yes it was nice (...) because we were looking together for a particular object"(L., 48)*, rather than sharing only a conversation - *"It's always good that everyone give their opinion on something to discuss together" (L., 16)* - is increasing or decreasing the intensity of the social motive, is challenging. The screen functioning like an amplifier can induce, an intensified social tension between the actors - *Well it can be annoying when it is, when we do not agree on the product "(M., 18)*. On the other hand, the screen materialized also as having the capacity to magnify positive social relation between the subjects *"Very nice, it was truly very nice, very nice" (T., 48)*. Notwithstanding,

In the commercial context, however, a first interaction appeared as a prerequisite before going on the screen with a shop assistant- *To check together (on the screen), yes, it can be positive, but at first I would prefer that the person talk to me (about the product)" L(48)*. It materialized as a progressive social process, when first a verbal exchange is necessary to enable the customer to assess the shop assistant's various competences (technical/digital/relational) (Authors, 2017d). This assessment appears to shape the appetite of the customer to share a screen with this specific shop assistant - *"We have to want to share that moment with the person"(T., 48)*. It can be lead to feelings of togetherness and closeness, or perception of social coldness and distance with a shop assistant.

Table 5: Amplified construction of social link value through the creation of common values, agreement and decisions in the private sphere

<i>"I like to have the opinion of someone else, it's for me, it's important and it can be the opportunity to actually look on a screen <u>together</u>, and there actually, <u>the both of us</u> will watch it" (C., 60)..</i>
<i>"In fact, <u>to choose together</u> much more easily" (D., 34)</i>
<i>"This common shopping journey upstream at home allows you to negotiate and agree before going to an agency office or shop" (C., 60)</i>
<i>-"It can be a moment of exchange ... From a quality point of view it can be nice (D., 55)</i>
<i>"It's nice to be side by side, to do this together, of course"(D.,55); "Between me, the children and N.(my partner), there is ... this exchange in the sharing of pleasure" (T., 48).</i>
<i>"And as we do almost all the same things in the house, it's true that it's things that we do together too" (C., 60).</i>
<i>"It's something (the common navigation on a project that we choose together) ... that I like, that I find rather pleasant, rather pleasant (...)- And there is not one more than the other who will do it, no it's really something that we both share, yeah "(C., 60),</i>

Table 6: Amplified destruction of social link value through the presence of the screen around the partners in the private sphere

<i>" I do not like it so much because it's a triangle that complicates relationships (H.,60)</i>
<i>"But it's not the best way because we do not communicate the same. It's a communication if it's a face-to-face conversation (S.,27)"</i>
<i>No, but it's not my thing to be two behind a computer, to show" (M., 40)</i>
<i>"if it's just him, look for him, have him search the info and extract it to give it, he does not really share with us either the screen or the manipulation (T., 48) -</i>
<i>"After if I'm surfing with my phone, uh, I can show someone something, but we're not surfing together" (S.27)</i>
<i>"I pass the computer to another person but we are not both (together on it)" (M., 40)</i>
<i>"But it's still disturbing to have someone next to navigate, so everyone has his ..., his point of view ...(M.,60)</i>
<i>"Well it can be annoying when it is, when we do not agree on the product "(M., 18)</i>
<i>"It is either one or the other that is on the Internet" (P., 55)</i>
<i>" So overall I do not imagine it as something pleasant, rather confrontational" (P., 55)</i>
<i>" – 'No no, it's not this one, but if, but look, why did you close it (this window)' ... etc. - that's, it's too much" (L,16)</i>
<i>"But it annoys me sometimes, because he says "but it's not like that, you're wrong" (P., 79)</i>
<i>"It can create small tensions, small annoyances" (D., 34)</i>
<i>"Because it's quickly annoying "(M., 40)</i>
<i>"He (my brother) has his way and me mine- and sometimes we do not agree on ... the way of surfing and I get pissed off and he gets angry (M., 63)</i>
<i>"It creates, it creates annoyances " (H. , 60)</i>
<i>"I think it must have annoyed me" (L., 48)</i>

Table :7 Amplified construction of social link value through the creation of togetherness and an homely ambiance in the commercial sphere

<i>"If it's come like: ' I'll show you something interesting, nice, that's it and that's good, and I think that's good', and almost <u>reproduce what we can have/ do at home</u> ... (T., 48)</i>
<i>"Yeah but I think it's more <u>homely</u> like that! It's more like in the <u>family</u>" (L., 56)</i>
<i>"It shows that the seller is <u>trying to search with me</u>"(P., 55)</i>
<i>"It gives me <u>a sense of confidence</u> (...) we felt the person involved who also <u>liked this relationship</u> and what she was doing".(D.,55)</i>

Appendix 7: Enhancing screen-sharing individual values

This transparency effect appears to contribute to the feeling of reliability of the information as well as the perception of trustworthy the customer may feel toward the shop assistant. Therefore, the benefits of the open screen in a screen-sharing practice seem to grant a feeling of personal confidence to the customer, giving credibility to the supplied information.

Table 8: Amplified construction of individual expression value through the transparency effect of the screen

<i>"Yes, it's nicer, more classy to have the screen visible for both" (M., 40)</i>
<i>"They (the sales clerks) are trying to show what's on the screen, for more transparency we'll say, I like it, I like it a lot." (D., 24)</i>
<i>"It's a little less mysterious, we know what's going on, and we know what the seller or the person does" (D., 34)</i>
<i>"The vendor's speech is consistent with what's happening on the screen and uh... there is a consistency in there... and transparency too. I think it's good "(D., 55)</i>
<i>He is at a counter facing his screen and we would have wanted watching at it probably" (H., 60)</i>
<i>"It's a little frustrating (a closed screen) we'll say. It's not something that... dissuades me from my purchase we will say. It's not like the seller was unpleasant or if we were insulted openly (D., 24)</i>
<i>"Me, I like it a lot. We'll say it's something ... I like to know what's going on especially when it comes to buying something (D.,24)</i>
<i>"He was looking at the same time, and I saw everything that was displayed, it was done for that too, so that I could follow all the things that were happening on the screen (D., 55)</i>
<i>(Open screens) "I like to know what's going on especially when it comes to buying something. This is something we are going to say, we always <u>have the phobia to be led up the garden path</u> when it comes to buying something, even more if it's expensive, that is to say ... I do not know, it's is for maybe <u>the feeling of controlling things</u>, whatever happens." (D., 24)</i>
<i>"I prefer to see the screen in front, see what was happening on the screen. Uh, working with a hidden screen, it's not very nice because we always feel that we are forgotten, that <u>they fooled you</u> (...) and in a shop, it bothers me" (PJ, 78)</i>
<i>"What's good is that they turn the screen, <u>you see what he's typing</u> (D,55);</i>
<i>"He had his computer screen turned towards us and as he went, he added the elements of the desk, <u>we saw everything he added</u>" (S., 27)</i>

Table 9: Amplified destruction of individual expression value through the perceived limited freedom of action

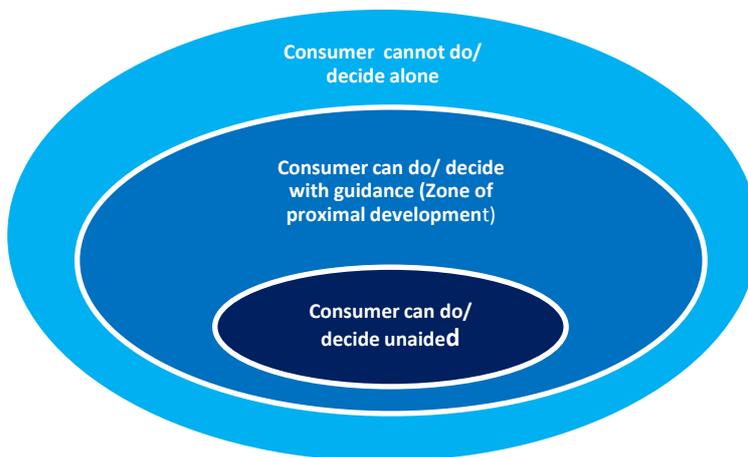
<i>It is one that surfs, there is only one computer and the other wants to surf otherwise. "(H., 60)</i>
<i>"It's not very intuitive. It's not very easy, ... the one who is not on the keyboard we can say want to go to a place where the other had not planned to go so it's not so... it is not very fluid "(D., 34)</i>
<i>"The other one does not go fast enough or does not do what we had in mind or that's it." (D., 34)</i>
<i>"Everyone has a different rhythm, some want to spend more time on the thing, others will want to go faster" (S., 59)</i>
<i>"I mean it's relative to the picture huh! In the image where we are! I mean when we are two on the same image we are not looking at the same place of the image and so it is, we are treading on each other feet globally (P., 55)</i>
<i>" Now, to look for information, one like to do that too at his own rhythm, that's why I think we do not necessarily want to do it together with somebody else, (S., 59)</i>
<i>"We do not read at the same speed, we do not want to do the same things (...) on the Internet, we do not want to click at the same place ..." (M., 40);</i>
<i>Well I would not stay long in this kind of thing no" (to watch the screen passively with the seller (C., 60);</i>
<i>"It's not practical to watch together. So if I really care, he goes into his own device that is in front - He looks on his own device, uh ... Well I quite prefer this way... it's because the sense of individual research"(C, 55).</i>
<i>"Yes, but I think it's not the same thing as doing one's own research, we're going to say in the intimacy, you see, to read the pros and cons, etc. We still have the feeling of being more free in our choices" (L., 48)</i>
<i>"When you are alone, you are focused on something else and you can work at it (M., 60)</i>
<i>".... the different timing that everyone has in the analysis of the content of the screen" (P., 55)</i>
<i>"Because the other one does not go fast enough or does not do what we had in mind" (D., 34)</i>
<i>"We do not read at the same speed, we do not want to do the same things from something on the internet, we do not want to click at the same place so here"(M., 40)</i>
<i>"One sees where you have to click and the one who has the mouse does not see it, so "but it is higher, it is lower, it is there" (H. , 60)</i>
<i>"Because he had closed a window too quickly..." (L., 48)</i>

Appendix 8 : A consumer screen-sharing approach according to Vygotsky's (1978) zone of proximal development

Vygotsky (1978) defined the concept of “co-constructed learning experiences” as a process shaped by the relational as well as the social context in which the understandings are being negotiated, shared and articulated. He described the “co-construction of knowledge” as a process stemming from verbal and non-verbal shared language as cultural tools.

While applying Vygotsky's (1978) learning theoretical approach to shopping screen-sharing between a customer and a shop assistant, the shop assistant's guidance in the purchase process can contribute to the learning experience of the consumer, allowing him a "cognitive shopping process" within a "zone of proximal development" (Chaiklin, 2003). Figure 1 illustrated a possible application of Vygotsky's (1978) zone of proximal development to consumer joint-shopping, in store with a shop assistant.

Figure 1: A consumer joint shopping approach of Vygotsky's (1978) zone of proximal development



While implemented to consumers and shop assistants, the middle circle represents the zone of proximal development wherein consumers can complete the task only with guidance of a shop assistant. Following Vygotsky's socio-cultural theoretical rational, it is possible to hypothesize that the consumer's "learning development" in proximal zone may benefit from this joint practice at a screen only "when partners have different levels of competence and interact positively in dialogue that includes questioning, providing elaborated responses, and instructing" (Shahrimin, 2001, p.101).

Howbeit, like with a teacher in a learning process, the negative or positive facilitation value of the screen-sharing practice appears to be linked to the technical and pedagogical skills of the shop assistant. More precisely, in a 'Vygotskian perspective', the role of the shop assistant can be accounted as a tutor/mediator supporting the cognitive learning phases present in any consumer's shopping decision.

Appendix 9: Piaget's (1964) socio-cognitive conflictual process of knowledge co-construction in a joint-shopping interaction in front of a screen, between a shop assistant and a customer

Nowadays, customers preparing significant purchase gather information and knowledge at various online and offline shopping channel sometime before addressing a shop assistant in a store. Therefore their level of technical knowledge about the product may be symmetric to the one of the shop assistant. Therefore, in this simultaneously mediated activity (by the computer and the shop assistant), "*knowledge is constructed, shared, debated, interpreted and misinterpreted*" (Edwards and Mercer, 1987)

While endeavoring to apply the CSCL approach to the field of joint-shopping at a same screen between a customer and a shop assistant, one can wonder whether the learning cognitive process in distinct purchase decisional stages as information search, comparison and evaluation are facilitated or complicated by the presence of the shop assistant (e.g., succeeding to help the customer to understand some technical issues about the product or on the contrary confusing him with too much overwhelming information, he shows the customer at the screen). As a matter of fact, the application of the "Piagetan logic" of knowledge, defending a more balanced co-construction approach advocating discussions and explanations based on disagreement and cognitive conflict between the interlocutors in the construction of individual knowledge and action, seems less appropriate in the case of screen-sharing practice with a shop assistant.

Figure 2: Piaget's (1964) socio-cognitive conflictual process of knowledge co-construction between a customer and a shop assistant while sharing a screen

