# TO SHARE OR NOT TO SHARE A SCREEN?
# A QUESTION OF "CONNECTED ATMOSPHERE"

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Résumé:

Cet article examine les motivations conduisant deux personnes à partager physiquement le même écran lors d'un achat. Fréquent au sein de la famille, ce «partage d'écran» (Roten et Vanheems, 2017a, 2017b) constitue une nouvelle pratique entre clients et vendeurs. L'analyse exploratoire qualitative a révélé trois motivations distinctes (utilitaire liée à la tâche, sociale liée à l'activité, et personnelle liée au contrôle) conformes à celles exposées dans la «*théorie des besoins*» de McClelland (1988). De plus, il s'avère que les "points de contact connectés" intensifient l'impact des composantes atmosphériques (Baker, 1986) sur la propension à partager un écran. La compréhension de ces influences situationnelles permet de mieux apprécier les caractéristiques des espaces adaptés à l'usage commun d'écrans entre clients et vendeurs au sein de l'espace physique de vente.

Mots-clés : «Partage d'écran» «Technique digital de vente» «Compagnon d'achat» «Omni-canal» «Atmosphère connectée» «Point de contact partagée» «Shopping connecté en magasin» « Phygital »

Abstract:

This article examines the motivations leading people to physically share the same screen while shopping. Quite frequent in households, this "screen sharing" (Roten and Vanheems, 2017a, 2017b) constitutes a new practice between shop assistants and consumers. The qualitative exploratory analysis reveals three motivational dimensions (task, social and control-related) in line with McClelland's (1988) "*needs theory*". Moreover, it appears that a "connected touch point" intensifies the impact of the atmospheric components (Baker, 1986) on the propensity to share a screen. The understanding of these situational influences provides a better appreciation of the space characteristics allowing successful uses of common screens between shop-assistants and customers in physical commercial spaces.

Keywords: «Screen sharing» «Personal digital selling» «Joint shopping» «Omni-channel» «Connected atmosphere» «Shared touch point» «Connected shopping in store»« Phygital »

## Introduction

Whereas screens current usage has considerably evolved in recent years, new forms of interactions between people have emerged. Transforming almost all aspect of our daily lives[1], screens enable new online shopping activities that can be carried out alone or with other people. Particularly today whilst more and more people have at least one personal screen at their immediate disposition[2], sharing a same screen at a same place and at a same time seems all the more surprising. Already in 2008, the Canada Internet Project found that 73% of Canadians who use the Internet share screen-pages or engage in an online activity with someone else near them. As a matter of fact, it can occur in various socio-physical spaces. Sharing a screen at a same temporal and spatial dimension[3] has become a quite frequent behavior in the household (Durand-Megret, 2013; Kennedy and Weltman 2007). Likewise, looking together at a same screen in a bus, at a coffee shop or even in the street, is not any more viewed as an exceptional event. Currently, it also emerges as a new practice between shop assistants and consumers (Vanheems, 2013). Nowadays, shop assistants in "connected stores" have been provided with digital devices. Some retailing stores have even instructed their sale's staffs to surf together with their customers[4]. However, neither the right place, nor the way to perform it in a manner compatible to the customer's motivations has been rooted within theoretical or managerial knowledge. Whereas retailers are facing crucial decisions about significant digital screen investment in their "brick and mortar" stores, very little studies have examined the general motives underlying this shared screen connected behavior (Roten and Vanheems, 2017a, 2017b). If experiencing the sharing of the same physical device might improve the shopping experience by giving birth to affinity and proximity feelings (Oren, 2011; Vanheems, 2013), it may also awake feelings of frustration and dominance, when the sharing process is not mutually accepted, (Marshall et al., 2008). Therefore, understanding the why, where and how to surf at a screen in a physical store with a customer constitute a critical issue for retailers. The willingness or the acceptation to surf with somebody else on the same device may be influenced by environmental cues as it has been demon-

[1] 48% increase in the number of smartphone users worldwide since 2014 – (reference: statistica.com)
[2] 8.047 billion mobile subscriptions at January 1st, 2017 – 8% more than the world population- (source wearesocial and hootsuite)
[3] Same place/ same time/ same screen
[4] This commercial procedure attends to help them to experience a "seamless shopping journey" between the online and offline channels of the retailer

strated that they have an impact on customers' behaviors[5] (Baker, 1986; Baker et al., 1994; Belk, 1975; Greenland, 1994; Lemoine, 2002, 2005; Kotler, 1973). Nonetheless, no researches have been conducted about the impact of atmosphere on the general motivation to join a partner while shopping in a store. Moreover, its influence while sharing a screen has neither been examined. How the "physical[6] atmospheric components" of the point of sale may affect the willingness to share a screen for shopping purpose? The present research described and questions in a larger perspective[7], what are the effects of the "sharing screen physical place" on the motivations to initiate, accept or continue to surf together for shopping. Our results show that a first willingness to shop together or get assistance from a partner is a necessary condition before sharing a screen with him. Consequently, due to the lack of marketing studies in this field (i.e. sharing a screen for shopping purpose with distinct partners), we have referred to the joint shopping literature (in store and online) as an adapted theoretical framework to understand the motives leading people to this *"physical"* shopping screen sharing activity. This research adopts a general approach, striving to suggest a theoretical model of shopping screen sharing motivations and activity within different contexts (partners and physical places characteristics). Sharing a screen with a shop assistant in a store is deemed as a specific case in this general design.

Additionally, this paper contributes to the understanding of the concept of "*physical connected touch point atmosphere*[8]*"* as well as its effects on the motivations to share a screen in a shopping process. Although an increasing volume of purchase are carried online in various private or public touchpoints[9] (at home/ at the office / at a coffee place/ in the underground/ in the street), the connected touchpoint atmosphere has not been investigated till now. Whilst retailers still hesitate how to smartly invest in the digitalization of their "brick and mortar" stores, they have always focused on the characteristics of the more suitable devices for their teams. How social, ambiance and design atmospheric environment components can impact distinct motivations to share a screen? This is the main question that this research tries to answer.

[5] Environmental component have been also highlighted online, shaping the website atmosphere (Lemoine, 2008).

[6] Although interesting, the center of interest of this research is the physical atmospheric components and not the jointly browsed websites atmosphere

[7] In private, public and commercial physical sphere

[8] A *"physical connected touch point"* can be described as any point of physical meeting with a brand and its representatives, where there is a simultaneous online connection at the same time.

[9] We can suppose that they occur either when one customer alone is facing the screen or when the screen is shared with another person

## 1. Conceptual Framework

« Sharing a screen» can have distinct meanings and refer to very different situations. Our study focuses in a screen sharing co-located and synchronous situation at a common device[10]. However, in order to clarify these distinct situations, the table below (Table 1) describes the possible spatial-temporal screen sharing dimensions[11]. While retail studies have traditionally been interested about the interactions between the brand and a sole individual consumer (Tsiros and Parasuraman, 2006), the motivation to integrate a screen into "*face to face interactions*" (Wellman and Rainie, 2013) while shopping, has not been studied. In order to understand the motives inciting people to surf on the same screen, we first address the literature about dyadic collective decision-making and space appropriation in a sharing process. Then, we examine the various theories about the general willingness of partners to shop jointly in a store and online when sharing a browser. Next, a short review of the atmosphere concept and the influence of environmental cues in a joint shopping situation are presented. Finally, we conclude this section discussing the emergence of the relatively new theoretical concepts of connected commerce and shared touch point

**Table 1**: *The different situation of screen sharing situation*

| ***Sharing a screen situation Temporal/ Spatial dimensions*** | **Same place/ same screen (Co-located)**<br><br>**Around the same screen** | **Different place/ different screen (Remote)**<br><br>**Through different screens** |
|---|---|---|
| **Same time (Synchronous)** | Physical screen sharing *Around the same device*<br>(Physical screen sharing) | Screen to screen browser sharing[12]<br>*Through different devices*<br>(Online screen sharing activity at different devices) |
| **Different time (Asynchronous)** | Alternate/shift screen sharing[13]<br>*Around the same device*<br>(Alternate continuous tasks at the same device) | Screen to screen content sharing[14]<br>*Through different devices*<br>Online (pictures/ documents/ posts) |

[10] Same time/ same place/ same screen

[11] The dimensions of the "screen sharing" situations are similar to the groupware matrix concept (Johansen, 1988; Baecker,1995) in computer-supported cooperative work (CSCW) field research (See Appendix 1)

[12] E.g. Skype screen sharing and other software online sharing

[13] More frequent while there is only one available screen or one shared work station (in shift work). Rarer nowadays in the smartphone omni-presence screen era.

[14] Sharing only contents through distinct devices

1.1. A collective decision process: why and with whom?

Customer literature has mainly analyzed the collective decision-making process while shopping jointly in the friend and family relational perspective (i.e. the consumer decisions in relationships: Simpson et al., 2012; the purchase-pal: Bell, 1967; the companion shopper: Lindsey-Mullikin and Munger,2011). On the other hand other fields of research (social policy research) have also considered the "*shared decision-making*" (SDM) [15] and its dynamics (Beresford and Sloper, 2008). Similarly to consumer behavior scholars[16] (Alba and Hutchinson, 1987; Furse and al., 1984), they have focused particularly on whether or not expert advice is accepted or rejected by the user/customer. Jungerman and Fischer (2005) suggested that 'informational asymmetry' might explain expert - non-expert decision making situations. However the issue of purchase relevancy, as defined by Lim and Betty (2011) in their work, appears to constitute one important motivation to a collective shopping and decision process. Kiecker and Hartman (1994) suggest that persons having a similar level of involvement (e.g., purchasing a product with a similar level of interest and values) will be more willing to share a shopping journey.

Several studies have also been conducted on the identity and the influence of the partner (in the private sphere), describing the partner's relation and gender role influence in consumer's decisions (Lim and Beatty, 2011; Nikolova and Lamberton, 2016; Simpson et al., 2011). Others have tried to explain the link between the choice of a specific partner and the shopper's prime motivation (Kiecker and Hartman, 1994). Moreover, the shopper's identification level toward the shopping place has been acknowledged as affecting the choice of shopping alone or with specific shopping partners (e.g. friends or relatives) (Borges et al., 2010).

1.2. The appropriation effect: Is it a question of giving and taking "space"?

In the perspective of the appropriation paradigm[17], a shopper may prefer not to share a place (a specific retail outlet stores or mall) he enjoys alone and feels it partially belongs to him. Contrariwise, he can be willing to share with specifics others a part of

[15] SDM usually describes decision-making between a professional (typically a doctor) and a lay person (patient or other service user).

[16] The evaluation is commonly based on the perceived relative expertise and experience of the partner regarding the product.

[17] The appropriation concept may be defined as "*the totality of actions to whom we proceed to enter into possession of our surrounding in the sense of their transformation for certain use"* (Noshis et al.,1978)

what he considered as his space in distinct "places" (Michaud-Trevinard, 2011). In certain situations, some consumers might experience a need for a re-appropriation process to regain a feeling of their own *"place in the space"* (Aubert-Gamet, 1997).

An "appropriation effect" might also occur while sharing a space in front and at the control of the shared surfing. In the case of screen sharing, the appropriation process seems to be dichotomous; the one linked to the physical space (e.g.: Dourish, 2006, "Re-space-ing place: place and space ten years on") and the other related to the control of the screen as a media (Gaver, 1992,"The Affordances of Media Spaces for Collaboration"). Despite these interesting theoretical approaches, very few studies have been conducted about dyadic decision-making and appropriation process when it happens in front of a screen. For instance, Berrada (2014) has examined the influence of spouses and classified their negotiation strategy while choosing to purchase a show tickets together online, but without considering the motivations of the spouses or the space and screen appropriation issues.

1.3. Shopping on-line: why do people share the same "virtual screen"?

Several authors have focused on the virtual sharing phenomenon, when browsed pages from one remote computer are shared with another one. Their results point out, that factors as the perception of the social co-presence, shopping enjoyment and flow (Kim et al, 2013; Zhu et al., 2008) impact the reuse intentions of this remote sharing activity. Moreover, remote online sharing has been promoted by large social media networks (Facebook, twitter, etc.) and big commercial sites (Ebay, Amazon, etc.). Nowadays, *"Countless websites have some kind of 'Share' button that enables the surfer to bring the page to the attention of others"* (John, 2012). This share button has been incorporated as an option proposed to the customers in the order process, to incite them to join a pal in the shopping process. Its objective has been to generate positive results on customer's shopping enjoyment (Sommer et al. 1992; Lanier, 2001; Owyang et al., 2009) and on retailer's sales volume. Furthermore, Human-Computer-Interaction (HCI) scholars have suggested that this collaborative practice encourage social comprehension, cooperation and consensus (Nardi, 2005), as well as it allows a more precise partner's assessment (Kahai and Cooper ,2003).

1.4. Shopping in store: why do people shop together?

"Joint shopping" (in store) literature have outlined utilitarian (e.g. financial perceived risk, purchase relevancy) and hedonic (e.g. expected shopping pleasure) factors as

motivating people to shop together (Beatty and Talpade, 1994; Furse et al.,1984; Hartman and Kiecker, 1991; Lim and Beatty, 2011, Wagner, 2007). Additionally, the companion's effect can generate distinct motivation to shop together (Kiecker and Hartman, 1994). Actually, the choice of *"strong ties partners"*(e.g. close friend or close relative) is stemming mainly from moral assistant needs, when at the opposite a *"weak ties partner"* (e.g. colleague, neighbor or advisor) selection originates from more functional motivations. Further, joint shopping impact appears to vary across context, depending as well on genders and relationship of the partners (Lim and Beatty, 2011; Kiecker and Hartman, 1994).

1.5. Contextual factors: How they affect the motivation to shop with a companion?

As a matter of fact, "stores joint shopping" researchers have argued that contextual variables influence the willingness to jointly shop in stores. Borges et al., (2010) suggests in their works, that the shopping environment identification level of the consumer while shopping with a friend or a relative; might affect distinctly the willingness to shop with a partner. Hart and Dale (2014) in their research about the positive and negative influence of retail companions strive to evaluate *"whether the influence of shopping with a companion is consistent across retail contexts with service components or between genders"*. In order to retain a more integrated perspective of those varied and complex contextual influences about this physically shared connected activity, the "Person Object Situation" (P.O.S.) paradigm developed by Bloch and Richins (1983), Punj and Stewart (1983) and Belk (1975) might provide a clear and adapted framework. Shopping with a specific "Partner (Person)", to purchase a specific "product (Object)", while sharing a screen in a specific "personal temporal situation" at a "physical space" (Situation)"; can appropriately represent the various contextual variables motivating a person to shop jointly with somebody else.

1.6. Environmental factors: can they affect the willingness to shop jointly?

Several studies have analyzed the store atmosphere influence (Baker and al.,1994; Greenland et McGoldrick,1994; Lemoine and Albertini, 2000; Lemoine, 2002, 2005) on the consumer's behaviors. Social, architectural and ambiance environment factors (Baker, 1986) have been classified as its main impacting components. For instance, service components such as physical environment (facilities, design, decor) might affect consumers' perception about the expected service in the store (Bitner 1992)

Similarly, environments in which there is an online or offline interaction with the brand representatives before the purchase, will have an influence on the consumer's perception of the physical or virtual store (Tsiros and Parasuraman, 2006). However these analyses have focused only on the sole consumers' behaviors in a physical store (store offline environment) or in an online virtual store (website environment).

1.6.1 Which atmosphere may stimulate "joint shopping"?

Interestingly, "online joint shopping" authors have largely discussed the social aspect of this remote activity (e.g. Kim et al, 2013; Zhu et al., 2008). However, in the perspective of remote online browser sharing activity, the ambiance and design website atmospheric components (Lemoine, 2008), have drawn much less attention from scholars. As a matter of fact, researches on joint shopping (in store and online) have not borrowed the concept of atmosphere in order to understand its effect on the propensity to joint shopping. Understanding to what extent the atmospheres main effects on the sole consumer in store could be extrapolated and applied to partners shopping jointly in the same place, is a question that has still not be addressed by researchers.

1.6.2 The social environment: Is the shopping partner part of it?

The social environment effect refers to the presence or absence of other persons while shopping (Eroglu and Machleit, 1990, Hui and Bateson, 1991). A purchase may occur in a situation when the shopper is alone or accompanied with friends or family members (Lemoine, 2000). However, in joint shopping studies, the influence of the partner has been considered as a distinct factor (Hartman and Kiecker, 1994; Borges et al., 2010). As described by Hart and Dale (2014), *"a companion shopper with whom intentions are shared is far different from strangers in a crowd with whom few intentions are shared"*. There is a clear difference between a chosen shopping pal and the presence of other consumer in the same commercial space. "***This suggests sake difference in the influence of others depending on whether we are acting with them jointly or merely acting while in their presence***" (Hart and Dale, 2014). Then the analysis of any type of joint shopping, including screen sharing shopping situation need to treat separately the influence of the partner in the dyad's interaction as well as the social presence of others around them.

1.7. The touch points

The term of "touch points" recently use in the literature (Verhoef, 2015) is characterized by the fact that new and multiple points of contact[18] between the consumer and the brand have appeared with the growing popular use of screens. Some of this touch points may be deemed as "hybrids" tangling physical and digital contacts[19] points between the consumer and the brand. Physically sharing a screen with a shop assistant represents a classic example of a simultaneous activation (Vanheems, 2015) of multiple touch points.

1.7.1. The shared connected touch point[20]: a new physical place to shop together?

The term of "connected[21] touch point" underlines the physical spot where happens this connection between the customer and the brand. It can take place with any digital devices at any places that enable an online connection with the brand. While physically navigating together on the same screen, an online connected contact between the consumers and the brand may be shared. Shopping jointly at the same screen actually happens in different socio-physical spheres (See figure 1). It can take place with different persons (family members, friends, shop assistants, etc.) at different places (at home, in a store, in a public space, etc.) and with various devices (smartphone, tablets, laptops, computers, etc.).

**Figure1**: Screen sharing spheres and shared connected touch points (Thinkstock Image)


Comparatively to a dual interaction online or offline (between a sole consumer and a brand), it forms a distinct triangular interaction between two persons and the commercial brand, whether the partner is a private assistant chosen by the consumer or a commercial assistant chosen by the brand. (See figure 2).

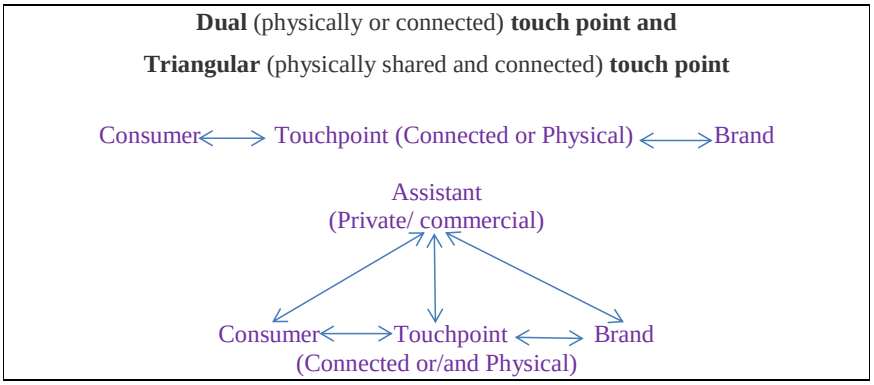
[18] The brand physical retailing and communication channels (the store, the shop assistant, etc.) as well as the virtual ones (the chat center, the website, the smartphone application, the social media pages) are today conceived all as "touch points.

[19] Sometime named also as "phygital strategy" (e.g. click and collect, digital in store, etc.).

[20] A "shared connected touch point"(SCTP) is defined as every place, private, public or commercial where co-located screen sharing activities might occur.

[21] In line with a study ordered by "La FEVAD"(Barda, 2011-the advent of connected commerce) in which the term of "connected commerce" was used.

**Figure 2:** Dual and triangular touch point




1.7.2. The "shared connected touch point" atmosphere

At distinct connected shared touch points (e.g. in a private home, at a coffee place, in public transportation, in a private car, in a commercial mall, in a specific store, etc.), the environment atmosphere may be quite different. Moreover at various times, they may also have disparate atmosphere. Actually, the website atmosphere as well as the physical touch point atmosphere may have an influence on the dyad's motivation to initiate or pursue a shared shopping activity. Currently, the literature focusing in omni-channel strategy[22] has not addressed the issue of the connected touch point *"physical atmosphere"*. Its impact on shopping motivations has not been investigated neither in the perspective of a sole consumer in a connected touch point, nor in the view of a physical dyad screen sharing. Whist this paper focuses on the effect of physical touch point's atmosphere, the influence of the visited websites online atmosphere on the motivation to share a screen remains an interesting topic, not addressed in this study.

This literature overview has addressed the motivation to shop jointly and to share a screen for shopping as well as the influence of the perceived environmental components on this motivation. Nonetheless, due to the relatively new issues related to the omni-channel phenomenon and connected touch point paradigm, customers behavior researchers still haven't investigate the effect of the "sharing screen physical place" on the partner's propensity to share a screen for shopping. This theoretical gap reinforces the interest of this research, aiming to suggest a theoretical model of the influence of the atmospheric connected touch point situation on screen sharing motivations.

[22] Seamless succession or simultaneous use of distinct channels and touch points

## 2. Methodology

A first exploratory phase of observation, watching people sharing a screen at various places (private and public places), was initiated[23]. It first appears that this behavior may occur in very different physical manner (standing, seating or even hugged) and with several devices (computer, laptop, tablet, smartphone, digital table, etc.). Moreover, observations and mystery visits have been carried out also at retailer's stores advertising themselves as "digital or connected stores" (where shop assistants use a screen in their selling process - see appendix 2: observations). First we have completed non-participative observations about the shop assistants use of screens in their interaction with their customers. Then in the same stores, a simulation of assistance request leading to an oral interaction with the shop assistant (mystery visits) has been performed. When the shop assistants didn't initiate the use of the screen in his process, we suggest it as a customer. This first phase of observation and simulation in a commercial sphere underlines that most shop assistants don't meant to share a screen with their customers. When it happens it is usually on a spontaneous way and without any programmed or set procedures.

Willing also to understand the motives underlying this activity, the next step has been to conduct semi-structured interviews (See appendix 3: sampling). Twenty French consumers were first required to describe a recent shopping experience in store in order to understand their store shopping orientation. 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 attitude toward shop assistants and "*joint shopping experience*" while facing the same screen in the private sphere (with a friend or relative) or/and in the commercial sphere (in a store with a shop assistant) (See appendix 3: interview guide). For the interviewees that didn't succeed to remember such an interaction with a shop assistant in the commercial sphere[24], a scenario based procedure was adopted. Such a methodology has been applied in couple's joint

[23] Due to the fact that we have not found any possibilities to watch people sharing a screen in a spontaneous way, the observation in the private sphere (between friends or relatives) hasn't been carried out on a systematic manner. The various observations are based on random situations occurring with relatives or friends at their home. Likewise, screen sharing situations in coffee shops / in the street/ or in public transportation has been watched when occurring. Notes about the observation have been written and analyzed according to "positional codes" and "devices codes" of sharing

[24] When all respondents succeed to recall a sharing screen interaction with relatives or friends; only a little bit more than half remembered such an interaction with a shop assistant.

shopping likelihood research to neutralize product category and time availability effects (Lym and Beatty, 2011). Further, these technics has been quoted by Bateson and Hui (1992) as "*having advantages over retrospective recall and can provide ecologically valid tests"*. Additionally, a detailed and repeated verbal explanation was usually required to explain the interviewees what we mean while using the term of *"screen sharing"*. This difficulty stems from the non-familiar designation of the phenomenon. Various disciplines have described it in several ways and with distinct terms (See appendix 5: Screen sharing terms). Similarly, respondents experienced also some troubles to verbalize past and/or imagined sharing screen situations during the interviews. Our first speculation was to attribute it to the sensible aspects of this activity. As a matter of fact, a shared interaction on a screen includes multiple dimensions (i.e. personal, physical, interactional, socio-affective and even technological challenges) that may often underlie implicit motives. The interviews has been recorded and fully transcribed[25]. A content analysis has been carried out according to the methodological recommendations of Evrard et al., (2009)[26]. 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 (open coding) was carried by choosing the presence of sequences of phrases having a complete meaning, defining them 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. Following this process, the categories that have emerged allow us to understand the main themes of "screen sharing motivation" (the "how"). Next, in order to understand the "why" of this process, connections between the categories have been also analyzed in order to develop the constructs (Miles et. al, 2014). Then, causal or correlational links between constructs have been examined (theoretical coding) till theoretical saturation (Glaser & Strauss, 1967). Finally, a process of reorganization of classifications and interpretation by inferential process led us to an open model. This coding procedure has allowed us to confirm preliminary

[25] The average length of the interviews are 35 minutes – The average interview transcription length is about 12 pages

[26] The content analysis has been based on qualities of completeness, consistency, homogeneity and relevance of categories, when they are clearly defined, objectified and productive (L'écuyer, 1990). The classification process has been mutually exclusive only in terms of meaning, and not in terms of the sentence.

existing codes based on the literature (concepts or links between concepts) and emerging codes that didn't appear in the conceptual framework (new concepts and new relationships).

## 3. Results: towards the understanding of customer's willingness to share a screen

The following section presents the themes and relations that have been identified in the content analysis. Screen sharing motivations appear to have its antecedents in psychological needs driving people to shop jointly. Three general motives emerge as shaping shopping willingness in various situations. Nevertheless, screen sharing motivation appears to be profoundly related to contextual factors, including the perception of the partner, the involvement toward the object (product) and situational factors as defined by Belk (1974; 1975). The results discussed in this section focused on the environmental factors having been identified in the analysis of the situational cues.

### 3.1. A psychological antecedent variable

Firstly the motivation to share a screen with a partner for shopping appears to be conditioned by the general readiness to shop together (Roten and Vanheems, 2017a) " *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)* . The latter is depending of an antecedent psychological variable that may be conceived as the consumer's personal predisposition defining his "shopping orientation" (Gehrt et Carter, 1992).

**Figure 3:** Motivational process


### 3.2. Three general motives: shaping shopping motivations in various situations

The content analysis identified three main motivation components. These motivational factors shape the shopping orientation of the consumer, as well as his willingness to shop with someone else and his motivation to share a screen while shopping. Nonetheless, despite their presences in these distinct concepts (see figure 3), they will show up at various intensities in each of them.

1. **A utilitarian task-related dimension** spawned by the need to succeed at the shopping task in the most efficient manner, appears as a distinct motive. It has been expressed as a need for functional assistance *"I went to ask questions that may help me to make my choice and that, in fact we cannot find on the Internet." (H., 60)* or subjective support *"If I have a doubt, if I want to have an opinion, I ask and then if we do not agree, and ultimately the product interests me, we will lean to look together" (Daniel, 24)*. Likewise, it can also stem from a need for objective immediate information *"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). This dimension is governed by an achievement need of the task itself (McClelland, 1988) and can be described as "transactional oriented"
2. **A social activity-related dimension,** expressed as a more intrinsic motive for social bonding emerges also from our content analysis: *"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).* The shopping activity is in itself a mean for developing social exchange and recreation activity with others as well to strengthen agreement, social self-definition and social acceptance. This dimension is oriented toward the activity itself and associated to affiliation needs (McClelland, 1988) and relational motives of shopping.
3. **A personal control-related dimension**, stressing a need for more individualist motives, emanate from the interviews. Two subcategories motivational themes have been identified:
    a. One active control theme that can be compared to an "agency" personal orientation (Bandura, 2009a) applied to shopping activity. Stemming from a personal urge for status affirmation and a need of power (Mc Clelland, 1988) in social exchange, it is expressed by the willingness to lead and have an impact on the shopping process *"Well, if it's for me, I'd rather to be in charge of it"(M., 40).*
    b. One reactive control theme acknowledged as a reactance orientation. It rises from a need to react to a perceived potential fear of losing control of the process *I'm afraid they will change my mind, that they will try to orient me (to other choices) (H.,, 60).* Status protection and reactive power need (McClelland, 1988) usually generate this behavior of passive surveillance *"I like to*

*know what's going on especially when it comes to buying what... I don't know, it's for maybe the feeling of controlling things, whatever happens." (D., 24)".*

Albeit these motivational dimensions appear in the shopping activity at different intensity, a personal psychological tendency shapes firstly their initial values. Actually, the content analysis reveals that their intensity changes and evolves according to personal experience and contextual factors. *"When I am willing to and in the conditions that I find more pleasant"(T., 48)*

3.3. The context perception: an influence on the motivation to shop jointly?

The motivations to shop jointly appear to be linked also to contextual cues. The content analysis indicates that the perception of the surrounding in "joint shopping" context stems not only from the environmental situation at the touch point. Other factors related to the perception of the partner's involvement[27], competence[28] and availability affect also his motivation. In accordance to the literature, the situational cues appear in our interviews as affecting general shopping motivations *" No, because when we were there, there were too many people and when there are too many people… it takes away my patience (…)" (L., 16).* In fact, the design, ambiance and social anticipated situation of the store may deter partners to shop jointly at the store. *"If we had gone to an Apple store, there would have been a lot of people around, it would have been very noisy" (T., 48)*. Contrarily wise, it can encourage the shopping joint activity "*So, an Apple store is always very nice, very beautiful, it has everything in demonstration" (O., 39).*

3.4. Situational cues: an amplified influence on the motivation to share a screen?

The three motivational factors (utilitarian, social and control) appear to be present at distinct intensity before and during the sharing. Even if a motive is dominant at a given moment, the distinct motivations continually evolve following contextual perceived cues from the partner or/ and from the touch point environment.

Therefore, the situational characteristic of the touch point emerges from our content analysis as inciting or dissuading screen sharing. Moreover, it appears that web surfing is conceived as an activity requiring a place where the subject may feel comfortable and in a homey environment. "*But the information, if I have to look for it, I will...I'll get it at home, maybe I need…it sounds very archaic… to feel myself...in my world" (H., 60).*

[27] I.e. the perceived relative involvement toward the purchase (Roten and Vanheems,2017a)

[28] I.e. Perceived relative competence about the technical aspect of the product and about the relational quality of the partner (Roten and Vanheems, 2017b)

3.4.1. Shared connected touch point and space privacy

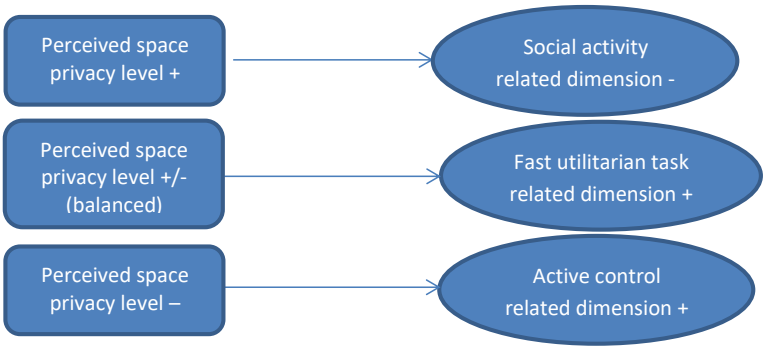
An intense human traffic at physical places has been acknowledged as reducing the motivation for extended social contacts (Harrel et al., 1980). Our results show that the perceived privacy level of the touch point influences the distinct motivations to share a screen. A perceived crowded atmosphere at a store might reduce the time spend in sharing *"There are so many customers so he will not stay an hour with me (on the screen)" (L., 56).* It will actually foster fast utilitarian task-related and active control-related motivation, limiting as well motivation to screen sharing related-social activity, perceived as requiring time availability and privacy. *"The idea of sharing (…), it is that we have time, to take the time to… look at things quietly (T.,, 48).* Interestingly, an evaluation of a too extreme perceived level of space privacy appears to have a bidirectional effect. Not enough or too much space privacy may generate a break on the motivation to share a screen. A situation considered as having exaggerated space privacy, especially in an unknown environment and with a person we don't know well (e.g. the commercial sphere), might also feel uncomfortable and intimidating. Likewise, when it happens with a person we wish not to be too long in a one to one situation *"By obligation, I mean - if it lasts a little, it's annoying" (H., 60)* , it will be also considering as annoying. In these cases, a fast functional or active control will be preferred by the consumer, reducing social motives " *So a shop assistant who would invite to look for product information is top, if it will take two minutes ... "(M., 40).*

To summarize this emerging theme (See figure 4), the content analysis shows a relation between the perception of non-privacy and the trigger of personal control-related motives. "*In store, there is less this tranquility, there is more this side "we are there!", and we must quickly make a decision" (T., 48.).* On the contrary, a high perception of space privacy may encourage social-related activity motivational component *"Yes, very nice, it was very nice very pleasant (…) we were not "polluted" (disturbed)... by other things"(T., 48).* In the private sphere, teenagers prefer to share a screen with friends in their private room than in the middle of the living room *" Yes in my room" (L,16).* A more balanced space privacy perception appears to be related with utilitarian task-oriented components of the screen sharing interaction *"It can be something that is fast, I mean not something requiring to go and to lock ourselves in an office to check a point" (D., 34).*

3.4.2. Shared connected touch point and ambiance components

The perceived ambiance of an environment has been acknowledged as influencing customer shopping behavior (Kotler, 1973, Baker 1986, Baker et al., 1994). Two *"ambiance"* themes described as auditory and visually convenience level results from the content analysis.

**Figure 4:** Perceived space privacy level[29]

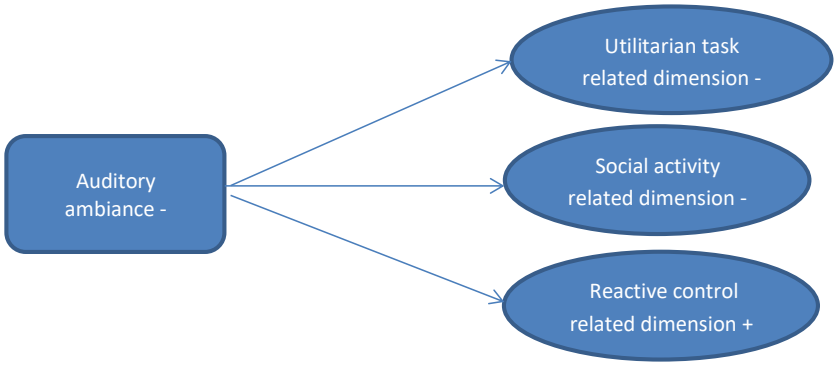



3.4.2.1 The auditory ambiance (Music/ acoustics /Lights)

In accordance with the extended literature on this topic, the content analysis results emphasize the influence of noisy ambiance environment (Noisy music/ Bad acoustic) on the motivation of interaction between customers and service encounters as well as the time spent in the place (Bitner, 1992; Reunier, 1998). "*If there's music I'll immediately be annoyed. Strong music makes me crazy in general, I come out very quickly. (P.,55).* However, the effect of this sensory factor appears to be amplified while anticipating to share a screen with someone *"I could do it if there was a dedicated and quiet area (T.,48).* Screen sharing activity can include active discussions or lessening. Then, a perceived noisy ambiance or bad acoustic will provoke auditory difficulty, reducing the general motivation to oral exchange. Conversely, the more visual reactive motivational dimension appears to be enhanced in order to succeed to understand and control the process *"I saw her screen very well and on her screen, I saw a price that was very distinctly different from mine" (JP, 78).* Therefore, a perceived perturbing auditory ambiance may reduce utilitarian task-related and social activity-related dimensions, while increasing personal reactive control-related motives (See figure 5).

[29] In each figures presented in this paper, the signs "+ and –" represent a higher or lower level characteristic.

**Figure 5:** Perceived touch point auditory level

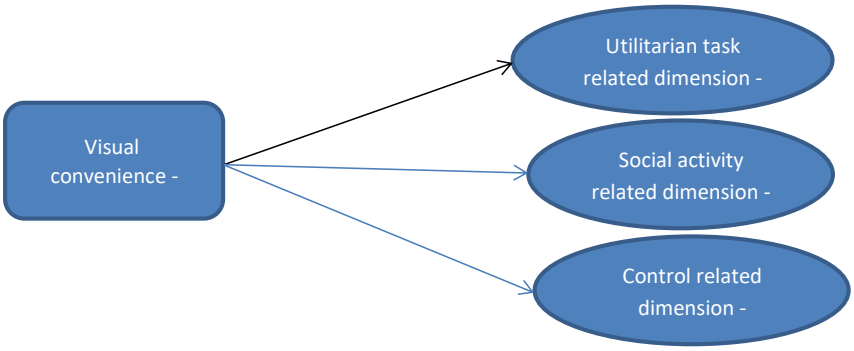



3.4.2.2 Shared connected touch point and visual convenience level (Screens angle and dimension/ Touch point lights)

The angle of the position relatively to the screen is associated with visual convenience or inconvenience "*we are too in diagonal from the screen, we no longer see anything" (P., 55).* In fact, the position of the customer relatively to the screen seems to affect the motivation to share at a screen. It emerges from the analysis that persons with dominant active control motivational dimension will prefer to limit the screen sharing activity *"It's not practical to look at two" (M.,60).* Likewise adapted lights[30] enabling comfortable use of a screen appear to form another basic necessary condition of an expected satisfactory screen sharing interaction. *"It can be a consideration, about the screen, if I can see things easily or not. This will certainly be something that will make me join or go away and elsewhere" (P., 55).* As well, the dimension[31] of the proposed screen, facilitating or challenging the sharing has a real impact on the motivation to share a screen *"Yeah, it's not pleasant, the screen is already quite small…" (M.,40).* Consequently the three motivational dimensions are logically negatively affected by visual difficulties (See figure 6 below). The shared connected touch point sensory situation needs to be perceived as "visually appropriate" to the two partners in order to motive screen sharing activities.

[30] Dazzling lights appears to perturb screen reading. The lights of the touch point need to be perceived as enabling a comfortable screen sharing, but not to create a "too much intimate" climate.
[31] The screen dimension issue will be analyzed together with the distinct sharing modes in a future article.

**Figure 6:** Perceived visual convenience



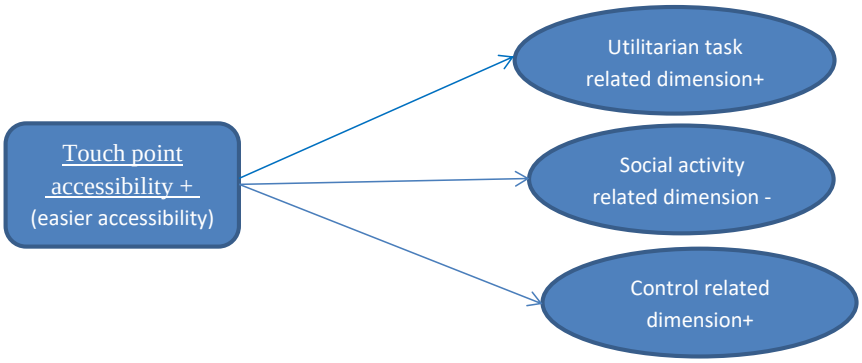

3.4.3. Shared connected touch point and physical factors

The perceived physical convenience of a situation has usually an influence on the motivation to undertake a certain action in a specific physical environment (Belk, 1975). Three *"physical"* themes including "physical accessibility", "physical comfort" and "physical proximity" emerge in the respondent's statements in our interviews.

3.4.3.1. The physical accessibility

If the access to the touch point is considered too bothering or requesting a non-justified effort, the motivation to share a screen might be reduced. "*Actually, the more fluid it is, the better; that is, you don't need to go up three stories, turn left, turn right" (D., 34).*To be led to a specific and separate calm place appears to be more adapted for customers with dominant social-related activity needs *" I could do it if there was a dedicated and calm space (T., 48).* However, fast utilitarian task-related and personal active control motives seem to require spontaneity and a seamless process. *"It comes as it is". (L.,16),* "*It is spontaneous, when she says to you "well, come to see this" (D,.55) ",Yeah, it's a quick sharing… I need their reaction right away to move forward (D.,55)".* It explains why it is done immediately at the nearer connected touch point usually by a personal device that is always on the person (i.e. smartphone or personal tablet). Thus, depending on the choice to foster screen sharing relational or functional motivations, the position of the touch point can motivate specific motivational dimensions. At a commercial spot, it needs to be pondered as a function of the retailer's selected atmospheric strategy (Kotler, 1973). (See figure 7)

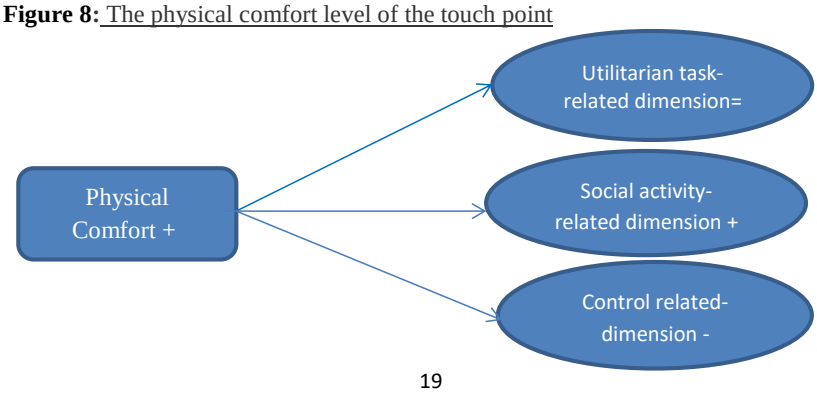
**Figure 7:** The shared connected touch point accessibility




3.4.3.2. The physical comfort

The sentences of the respondents stress also the anticipated comfort issue in their motivation to share a screen *"I find it rather complicated, it is still in front of a screen, so it is relatively difficult to be two persons in front of a screen, there is one that is more in front of the screen than the other"(Serge, 59 years).* If the physical position at the touch point will be deemed as not comfortable by one of the members, the sharing process may be limited to short practical information or approbation. As well it appears to reduce the willingness for a more social activity-related process that usually request an extended time *"After 10 minutes, there are no more than two people in front of the computer and the others waiting (…)" (M., 18).* The content analysis underlines that physical position in a screen sharing activity can be very diverse (facing/ standing/ seating/ lying), depending of the relational context between the interlocutors. Furthermore, distinct physical positions and their perceived comfort at the shared connected touch points might encourage or discourage functional, social and control motivations, while sharing a screen. (See figure 8)

**Figure 8:** The physical comfort level of the touch point



3.4.3.3. The interlocutors' positions and physical proximity

The physical position of the interlocutors while sharing a screen appears to affect distinctly the three motivational dimensions. Directly related to Proxemics[32] (Hall, 1963), a chosen physical position relatively to the other is a good indicator demonstrating the main dominant motives while sharing a screen. However, when it is imposed to one or both partners by a fixed design and configuration of the shared touch point, it will intensify the associated motivational dimensions (see figure 9).

a. Physical position and task-related motivations

Seating side by side in different seats appears to be a physical position that fosters screen sharing utilitarian motivation. - *No, we have a chair each, yeah, I bring my chair back and then uh, ... we surf together. (L., 56 )/ Yes we are either sitting next to each other or on the table. (L., 16)/ "One next to the other on a laptop" (M., 60)* In order to enable a successful goal oriented activity, the physical position at the touch point need to be convenient. The individual requesting assistance as well as the interlocutor bestowing support need an operating position in order to feel performant and efficient. Symmetric position in face of the screen appears to facilitate utilitarian task-related dimensions and promote anticipated functional benefices. *"We're sitting side by side" (D., 34)*

b. Physical position and relational motivations

When the main motivation is social, a more relaxed physical position of the partners appears to be preferred. *"On a sofa or a chair (...) yeah yeah, we don't do it while standing" (D., 55). "If it is a shared navigation, it is better to be installed comfortably in his chair (T.,48). "We could pass the computer, it passed with one hand to the other, more exactly from one knee to the other. (T.,48).* Depending on the relation and the level of intimacy, the readiness for warmer and closer communicative interactions with the partner, is expressed sometimes by a need for physical proximity between the dyad's members; side by side in the sofa *"On the laptop (...) on the couch" (S., 27)* or even lying "*So when it's late in the evening, its usually when lying on the bed (...) on the laptop" (S.,59).* In the commercial sphere, the attempt to encourage socialization and affiliation motives by standing and surfing together on a digital kiosk at a store seems to be incompatible with the relaxed and more physical intimacy expectation of a "social" screen sharing situation *"It was the same as if we had done it at home, but (...) less pleasant.. I mean while not sitting, there ... the experience is less interesting "(D., 34). "I could do it (...) if it was not in a standing position" (T., 48).*

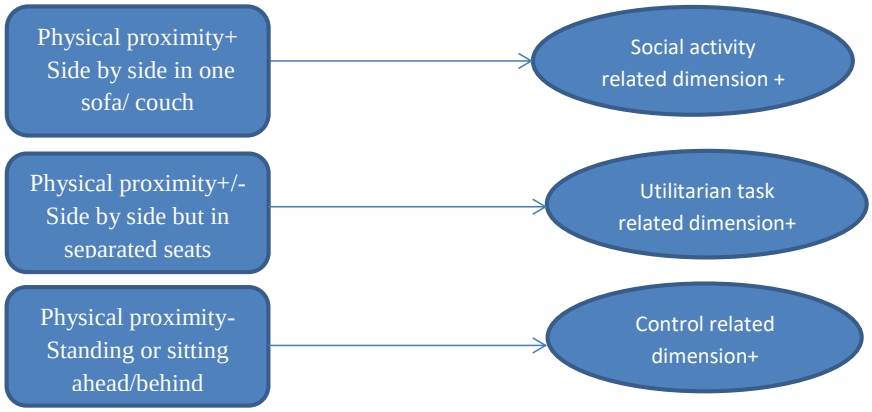
[32] The study of human use of space and the effects on behavior, communication, and social interaction

c. Physical position and personal control motivations

The interviews reveal that screen sharing control motivation don't include any prior requirement for a specific physical comfort level *"They (the kids) come behind me; they look at things with me... (D.,55).* While the control motivation is active, the actor is usually looking for a short spontaneous screen sharing opinion of the other to confirm or infirm his choice *"Yes look, I found that",my daughter will tell me" I saw this dress, do you like it or?" ...it is just giving an opinion"(M.,40).* Hence, the physical sharing position is less relevant *"So one standing and the other sitting on the armrest at the side of the sofa"(H.,60).* After an instantaneous sharing episode, the actor might continue independently even if the partner is still present in near him. "*You want to share quickly…that's it, you do it quickly as a gesture …"(D.,55).*

Other while, when the control motivational dimension is reactive, the partner, willing visually and passively control the content at the screen, might try to overpass the inconvenient physical position and endeavor to follow up. "*You are leaning a little bit to see and it's not easy to see with a diagonal angle on a screen" (C.,, 60).* Alternatively when it seems to be physically too much challenging, he might even give up and abandon his striving to see what's going on at the screen. *"As soon as we are too diagonal of the screen we no longer see anything." (P., 55).* (See Figure 9)

**Figure 9**: The physical position at the shared connected touch point



## 4. Discussion, theoretical and managerial implications

In this research, three motivational dimensions present in every individual at different levels, have been identified as shaping personal shopping orientation. These motives related to utilitarian, social and control issues define also the expected goals sought by a person while shopping with others. The combinations of these distinct components and their intensities are specific to each individual and situations. In fact, these dimensions appear to be coherent with McClelland's (1988) *"Three Big Needs"* theory[33], suggesting that human motivational disposition may be addressed within three basic needs, defined as "achievement", "affiliation" or "power" needs (Sokolowski et al., 2000). Defined as "*motivational dispositions*" (Heckhausen and Heckhausen, 2008), they are quoted as "*implicit, early acquired, individually varying, stable motives*" (Schneider and Schmalt, 2000). Personality and socio-demographics characteristics of the consumers might be also deemed as partly expressed in the different intensity combination of these three needs[34]. As a matter of fact, previous findings (Roten and Vanheems, 2017a, 2017b) have stressed that the mediation of a screen in a *co-located*[35] physical screen sharing interaction emphasizes positively or negatively the intensity of the three motivational components (i.e. utilitarian/achievement, social/affiliation and control/power motives). Furthermore, the results of the content analysis point out that various contextual factors affect also the intensity of these personal motivational shopping dimensions. An adapted theoretical framework derived from the "Person Object Situation" (P.O.S.) paradigm[36] developed by Bloch and Richins (1983), Punj and Stewart (1983) and Belk (1975) can offer a clear typology of these identified influent factors. The "Person" in this paradigm represents the perceived competence of the "Partner" in a joint shopping situation (Roten and Vanheems, 2017b) – The "Object" symbolizes the relative perceived involvement

[33] The work of McClelland has been developed mainly in a managerial perspective (e.g. personality aptitude diagnostics for job candidate). Nonetheless, organizational psychology studies (e.g.: Sandalgaard et al, 2011; Rijavec et al., 2002) have used it also as a theoretical framework.

[34] E.g. an unsecure and/or young consumer might feel more stress and financial risks, expressed by dominant control motivations in specific situations with a shop assistant in a store. On the other hand, a more mature and experienced consumer, living alone, may be led by more dominant social motivations to shop assistants. Young spouses with small children for their part might be driven only by fast utilitarian motives depending of their personal situation and of the purchase situation in the store.

[35] The term of co-located use of screens (same place) is used in Computer-Supported Cooperative Work (CSCW) studies while describing a collaborative use of the same screen at a synchronous temporal dimension.

[36] Shopping with a specific "Partner (Person)", to purchase a specific "product (Object)", while sharing a screen in a specific "connected touch point (Situation)"; can appropriately represent the various contextual variables motivating a person to shop jointly with somebody else.

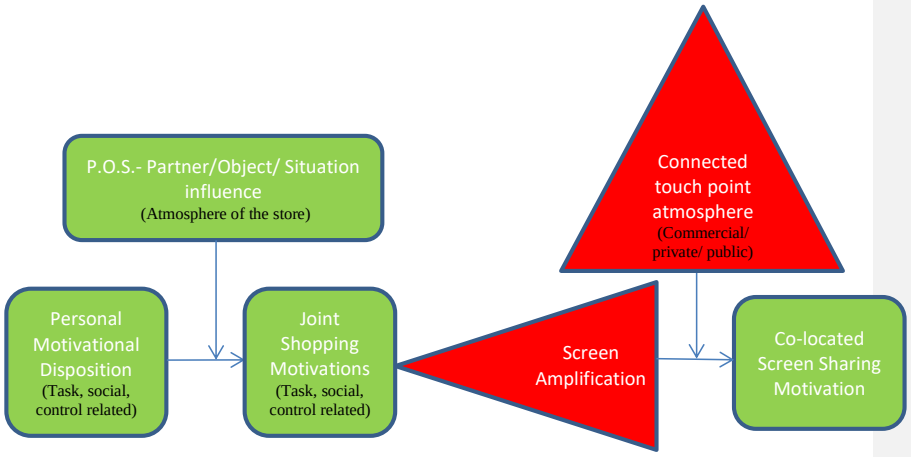
toward the product (Roten and Vanheems, 2017a) –The "S" of situational variables in this study, has addressed more precisely the atmospheric environmental factors

In this paper, a dispositional and situational approach have been aggregated while striving to understand "consistencies in social behavior in terms of the features of social situations" (Snyder and Ickes ,1985, p 884). This integrated approach results in a more complete comprehension of behavior motivations to share a screen for shopping purposes. Whereas the research questions query about the physical atmospheric effects on the motivation to share a screen while shopping, the three environmental components of the atmosphere concept (Baker, 1986) arose from the content analysis. However, the shared connected touch point, representing mostly a place of hybrid dyadic exchange around the screen for different purpose (utilitarian, social and control) appears to carry sharper environmental specificities (social, ambiance and design). The "social" atmosphere emanates as a representation of the appropriate space privacy level between and "around the partners"[37] at the shared connected touch point. Likewise, the "design" environmental component emerges as symbolizing all the physical dimensions both of the touch point (accessibility) and of the dyad's position (physical comfort, interpersonal proximity position). The "ambiance" atmospheric factor of the shared connected touch point is materialized by the perceptions of the sensorial conditions allowing this co-located screen-mediated exchange. Indeed, visual and auditory aspects are highlighted due to the underlying simultaneous visually-displaying and verbally-explaining facets of this activity. Therefore comparatively to a "joint shopping in store" or "shopping alone" situations, the expectations of simultaneous verbally and visually sharing in a "small physical and digital space" (the touch point and the screen), magnifies positively or negatively situational influences on the motivations to share a screen. Consequently, the sharing screen physical place and space perception will have a more meaningful influence on the distinct motivations to initiate, accept or continue to surf together in a shopping situation. According to the objectives of this research and following these findings, a first screen sharing process model, centered to the atmospheric impact[38] is proposed in figure 10.

[37] The mere presence of others around the partners forms as well a part of the social atmospheric environment of the shared connected touch point.

[38] Other identified personal and contextual factors linked to the relative perception of the partner's competence, role, product involvement and availability (Roten and Vanheems, 2017a, 2017b) are not presented in this model

**Figure 10:** The atmospheric impact of connected touch point on screen sharing




The theoretical contribution of this research is mostly the identification, classification and description of the factors generating and affecting shopping screen sharing in different connected touch points. Our findings reflect the basic understanding that sharing a screen together for shopping purposes need to be firstly driven by the general willingness to shop with a specific partner in a specific environment[39]. Furthermore, the results contribute to the understanding that the anticipated benefits of sharing a screen are linked to different motivations. Actually, the emergence of the amplificatory effect of the atmospheric environment on the motivation or breaks to share a screen represents an interesting theoretical contribution of this research. As a matter of fact these *"screen amplifying anticipated effects"* appear to intensify the impact of others identified contextual variables (Roten and Vanheems, 2017a, 2017b) not presented in this paper. Moreover, the implementation of the store atmosphere concept not only to *"screen joint shopping in stores"* but also in a *"private or public spot"* may generate important theoretical implication for future research in omni-channel retailing. Interestingly, the research results about the motivation to share a screen appear to be supported by a theoretical framework derived from motivational psychology research (Heckausen and Heckausen, 2008). Based on *"needs theories"*, at our knowledge, these motivational theories still have not been employed in customer behaviors studies. Combining them with recognized environmental marketing construct as the store atmospheric concept, can contribute to expand the scope of customers' behaviors

[39] I.e. depending of the actor's personal motivational disposition in a specific Partner - Object - Situation

comprehension. Additionally, this work allows to link the screen connected ubiquity concept (ATAWAD- Any Time, Any Where, Any Device) to environmental theories (Baker 1986) , by adjusting and describing the specific and amplified social, ambiance and design influence while using jointly the same screen.

This research might beget immediate managerial repercussions on retailers pondering how to digitalize their "brick and mortar" touch points. Understanding the motivation and expected objective of the consumer's shared use of digital devices can allow them to design a more effective strategy in this field. Several authors have suggested that shopping with others has a positive influence on individual shopper's behavior, spending increased time in the store (e.g., Bell et al., 2011; Granbois, 1968; Sommer et al., 1992; Woodside and Sims, 1976) and purchasing more volume at it (e.g., Bell et al., 2011; Kiecker and Hartman, 1993, 1994). Sharing a screen with a shop assistant can result in similar effects and boost sale volumes and time spent in the stores, at the condition that the sharing process as well as the shared connected touch point atmosphere at the store is congruent with the dominant motivation of the customer. This paper aims to stimulate retailers to rethink their main objective in the digitalization of the point of sales. The choice of bestowing more functional, relational or control expected value to customers might result in various digital investments in different spots of the store and with distinct "affording" devices (Gibson, 1977). Further, the retailers' decision to build shared digital spots in store (shared connected touch points) will necessitate an overall training of their sales staffs' enabling them to appropriately use a screen during their interactions with the customers. Moreover the shop assistants sensitization to customer's amplified reaction to atmospheric cues while sharing a screen at a touch point in store, may contribute to generate positive results in terms of transactional and relational benefits, while reducing customer's control needs.

**Conclusion**

Borges and al., (2010) in their research about joint shopping in store suggested that "*Many social aspects within the purchase environment can influence consumer behavior"*. Actually, as it emerges from our research, sharing a screen appear as a more critical situation involving not only an augmented sensitivity to social cues (the perceived space privacy level), but as well an increased reactivity to the ambiance (visual and auditory convenience) and physical perception of the connected touch point (ac-

cessibility, physical comfort and position). It involves a higher probability to deter people to share a screen relatively to a situation where they consider shopping jointly or alone in a store. Consequently, although they cannot be considered as exhaustive, our findings highlight clearly that the atmosphere of a connected touch point affects profoundly the intensity of the distinct motivational dimensions propelling people to shop together at the same screen. The limitation of this study is mainly related to the possible cultural effect, limiting the external validity of this research. The interviews have been carried out with French consumers. Can we extrapolate these results to all worldly customers? Although the motivational "three big needs theory" (McClelland, 1988; Heckhausen and Heckhausen, 2008; Schneider and Schmalt, 2000) that has been employed is theoretically based on universal human needs; cultural differences might modify the level of importance of specific environmental atmospheric cues. Customers might be more or less reluctant to share their screen with a shop assistant or a friend in a perceived noisy or socially and physically not so comfortable situation. Furthermore, the applied level of analysis, considering the consumer at an individual level and not the dyad in an interdependence perspective[40] might also reduce the internal validity of this study. As a matter of fact, an experimental approach with a multiple interaction design[41] adopting a "*component perspective*" (Malloy and Kenny, 1986) might have contributed more precise results. Future research within this approach could allow differentiating the distinct variances stemming from the personal motivational disposition of the actors and partners, from the situational factors and from the screen sharing interaction itself. Finally, this paper has focused only on the "situational" atmospheric influence of a touch point on shopping sharing motivation while facing a screen; not enabling a general aggregation of the links between all identified contextual factors. Other papers had or will exhibit additional contextual factors[42] affecting also the individual's three motivational dimensions (task, social or control related). Upcoming research might focus at the understanding and inference of the links between consumers' motivations to share a screen, the screen sharing processes themselves, the perceived vision of distinct " devices affordability" and experience values derived from this common digital activity. Moreover, future works per-

[40] i.e. when *"one person's emotion, cognition, or behavior, affects the emotion, cognition, or behavior of a partner"*- Cook and Kenny, (2005)
[41] i.e. when each person is considered as both subject and object, interacting with multiple partners
[42] As the partner's relative competence, his relative involvement levels to the product and his perceived availability (Roten and Vanheems,2017a, 2017b)

taining to the atmosphere construct in the new "touch point reference frame" (private and public) and not only to stores (Baker, 1986) or website (Lemoine, 2008) will open the way to interesting perspectives in this topic. Finally, the confirmation of the "screen amplificatory effect" enhancing positively or negatively the atmospheric environmental dimensions impacts on the intensities of the motivational dimensions (Roten and Vanheems, 2017a, 2017b), opens new horizons to the continuously developing omni-channel retail research.

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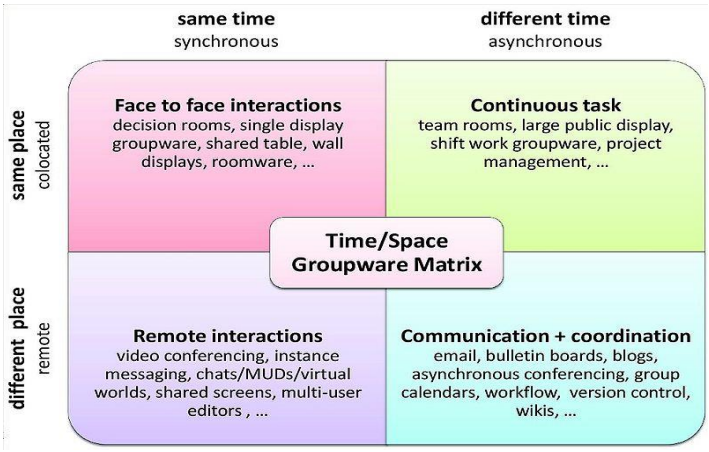
Appendix 1: **Computer-supported cooperative work (CSCW)**

How uses of technologies affect groups, organizations, communities, and networks? (Wilson,1991)




Source: Johansen, R. (1988). *Groupware: Computer support for business teams*. The Free Press.)

Appendix 2: Observation table

Observation and simulation
(Mystery visits in April 2015)

| | **Retailer Brand** | **Atmos-phere** | **Shared surfing Initiative** | **Physical position of screen sharing** (observation) | **Digital tools** |
|---|---|---|---|---|---|
| 1 | Apple store Paris Opera 75008 | Crowded | Yes directly on the digi-tal tool that the custom-er 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, ma-nipulating the device with the instructions of the shop assistant. | On the digital tool the cus-tomer is checking |
| 2 | Darty 3 times Beaugre nelle 75015 | Usual | No shared surfing ini-tiative, re-fusal of the shop assis-tants to surf together on the site of the brand | Standing position-<br>1. At the shop assistant sta-tion: the customer is on the side or behind the shop as-sistant, when they are checking alone and the cus-tomer can choose to look passively at the screen.<br>2. The shop assistant uses alone their tablet in face of the customer. The screen is closed to the customer | 1. Personal tablet of the shop assistants hanging on their neck<br>2.Open screen computer at the shop assistant work sta-tion |
| 3 | Darty Passy 75016 | Usual | No shared surfing ini-tiative, re-fusal of the shop assis-tants to surf together on the site of the brand | Standing position-<br>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. | Open screen computer at the shop assistant work sta-tion |
| 4 | But Wagram Paris 75017 | Relatively empty | No shared surfing ini-tiative, re-fusal of the shop assis-tants to surf together on the site of the brand | | 1)Digital Kiosk with a button " call the shop assis-tant- Au-tomatic answer that no shop |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | assistants are available for the moment<br>2) No open Wifi connection – just a catalogue |
| 5 | Milibu Paris Reaumur 75002 | 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 | 1. Digital Kiosk<br>2. Wall digital screen<br>3.Public Tablet |
| 6 | FNAC La Defense 92000 | Crowded | No shared surfing initiative, | Standing position-<br>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. | Open screen computer at the shop assistant work station |

Appendix 3 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 |

| Average age | Men | Women | Bachelor | Married + children | Divorced + children | Divorced | Retired |
|---|---|---|---|---|---|---|---|
| 47.4 | 11 | 9 | 4 | 5 | 5 | 4 | 2 |
| Percentage | 55% | 45% | 20% | 25% | 25% | 20% | 10% |

Appendix 4: Interview guide

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

Appendix 5: Screen sharing terms

| Screen sharing terms | Discipline | Authors | Approach and focus |
|---|---|---|---|
| *Purchase online with relatives (in a couple/ with teens, etc.)* | Marketing | Berrada, 2014<br>Jungermann and Fischer, 2005 | Joint shopping decision making and influence. |
| *Sharing Online Experiences with Partners* | Communication | Kennedy and Wellman, 2007 | Family new communication mediums |
| *Collaborative Collocated Interactions* | Human Computer Interaction | Ringard, 2011; Porcheron, 2015 | Collaborative interaction via a common communication tool for a shared mission |
| *Tools and Mediation Computer Based Learning Collaborative Educational Computer Environment* | Educational research | Stromme and Furberg, 2015<br>Shahrimin 2001 | Competition, dominance or collaboration between peer in the learning activity |

When the "joint decision-making" marketing definition focuses only on specific partner and seeks to understand the role and influence game on a mutual decision about a purchase, the HCI approach is based on a collaborative use of the device for a shared mission. They addressed also the characteristics of the shared screen (Horizontal touch tables or touch screens) Educational researches have generally more focused on the competition /dominance aspect in the learning dyad (The leading of the learning process- Who control the mouse/ the screen/ the process?)