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Article

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Eight years on: An extended model of online consumer behaviour

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It has been eight years since the seminal work of Hoffman and Novak (1996). The current article seeks to take Hoffman and Novak's core ideas, namely the construct of flow in the Internet environment, and extended the model with the research that has been undertaken since. The proposed model discusses flow and considers it in relation to the perceptions, motivations and activities of Internet users. The authors also discuss the behavioural controls or the barriers that prevent users from reaching and maintaining a flow state. Furthermore, the model shows the effects of flow on the different session types i.e. surfing, searching and shopping. The article concludes with suggestions for future research.

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Introduction

This paper is primarily based on the seminal work of Hoffman and Novak who, in 1996, set out the theoretical basis for the behaviour of the new online consumer and adapted the idea of *flow* (Csikszentmihalyi, 1977) to this new environment. Eight years have elapsed since their work was first published and it is still a remarkable tool for understanding what has been termed "e-behaviour" (the term used to describe consumer behaviour in the online environment). The authors endorse the model they put forward, but propose an expansion of the model to better understand the context and behaviour of online consumers now that eight years have passed since their seminal work.

The paper can be viewed as two parts. In the first, the authors will set out the context of e-behaviour and propose an extended model of e-behaviour, incorporating flow, presence and telepresence and behavioural controls, as well as the relationship between them in the computer-mediated environment. In the second part the authors will examine the dynamic interplay between flow and the main areas of e-behaviour, noted as perceptions, motivations, activities and relationships of consumers.

The authors feel that in the light of the research conducted in the past eight years Hoffman and Novak's (1996) model was too static and did not look at the dynamic nature of flow and the interactions it undergoes in the context of it, both as a moderator and in being moderated. The authors feel that flow is possible whenever a user logs on to the Internet and thus the authors wish to take Hoffman and Novak's (1996) premise and examine the subsequent literature regarding e-behaviour to develop a more comprehensive model of e-behaviour. Figure 1 is a representation of our argument. It shows the interplay between *flow* and the various constructs that make up behaviour in the mediated environment.

Behavioural controls, critical in the correct functioning of flow, affect both the physical and mediated environments. Although not represented in Figure 1, flow exists in different states in the physical environment but for the purposes of our argument the authors limit our discussion of it to the virtual one only. The behaviour of users continues in a circular pattern through perceptions, motivations and activities until they decide to exit the mediated environment. The authors put forward that flow exists in all these areas and has an effect on the functioning of each.

The context of e-behaviour

Computer mediated environments

The authors would first like to give a definition of the computer-mediated environment (CME). The CME serves as a conduit for interaction between users and the Internet (Hoffman & Novak, 1996) thus we can think of the CME as the context in which E-Behaviour takes place. The CME serves as a portal to an active, decentralized, many-to-many communication, open-access network environment (Hoffman & Novak, 1996). Flow occurs whilst a user is within the CME.

Flow

Csikszentmihalyi first articulated flow in the 1970s whilst studying people in the workplace. Since then flow has been applied to the CME by Hoffman and Novak. Flow is defined as the 'process of optimal experience' (Csikszentmihalyi, 1977; Hoffman & Novak, 1996) and is experienced during movement through the CME with different degrees of intensity (Hoffman & Novak, 1996). Flow was described by Hoffman and Novak (1996) as the glue that holds a consumer in the hypermedia environment. They also acknowledge that flow is not constant and 'ebbs and flows' as a consumer travels through the Internet.

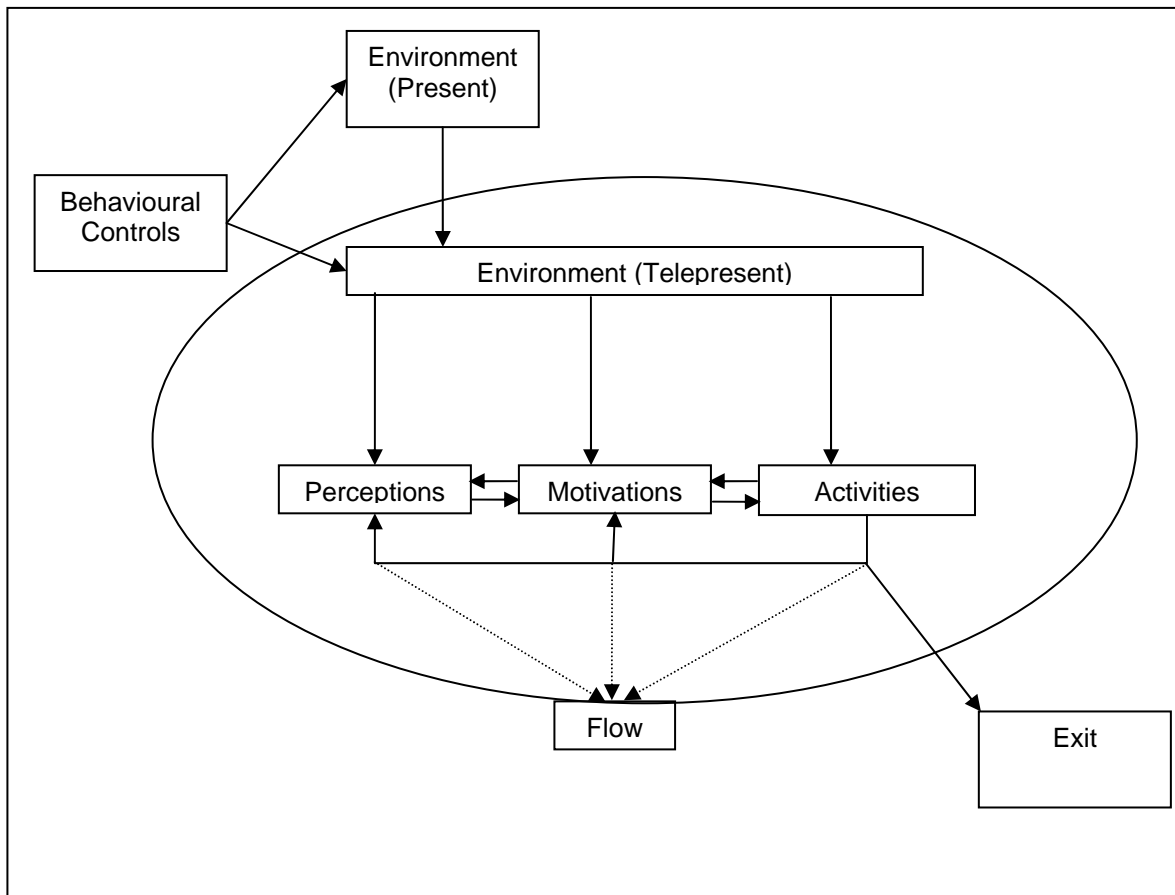


Figure 1: The extended model of e-behaviour

Antecedents to flow include a focused attention on the environment and the necessary skill (which are both behavioural controls) to overcome the challenge of the environment by matching the users' skills to the challenge they are presented with. Only when the skills of the users and the challenges posed in the Internet match will flow occur (see Figure 2). Interactivity and telepresence enhance flow and are noted as secondary antecedents of flow by Hoffman and Novak (1996). The authors feel that they both have the potential to disrupt flow as well, as will be shown later in the paper.

The conventional model of flow suggests that if the user's skills are in excess of the challenges they find in cyberspace, they will experience *boredom* when the environment becomes too familiar and doesn't provide any satisfaction. Whilst if the challenges they find in cyberspace are beyond their skills, they will feel *apathy* towards using the Internet as they will feel overawed and unable to master the Internet. Both cases will lead to the flow state not occurring and the user either exiting the Internet, or not 'logging on' in the first place.

Hoffman and Novak (1996:57) describe the flow experience as '...characterised by a seamless sequence of responses facilitated by machine interactivity, intrinsically enjoyable, accompanied by a loss of self-consciousness and is self-reinforcing.' The choices made in a flow state are intuitive and spontaneous - so the user just 'flows' from area to area in an 'oblivious' state (Hoffman & Novak, 1996).

Consequences of flow include increased learning (gaining of skills), greater 'perceived behavioural control' (that is, the ease of performing the behaviour) (Hoffman & Novak, 1996), higher exploratory behaviour and positive subjective experiences. Thus, we can say that more experienced Internet users are more likely to experience flow. As the user gains experience, so the consequences change or increase. By categorising the type of experience a user has, the user is pigeonholed in a neat, closed box that should rather remain open ended. This could significantly alter the way authors such as Sheehan (2002) have described surfing and searching sessions, as they make little distinction between the degrees of the behaviour they observe, which flow dictates will exist.

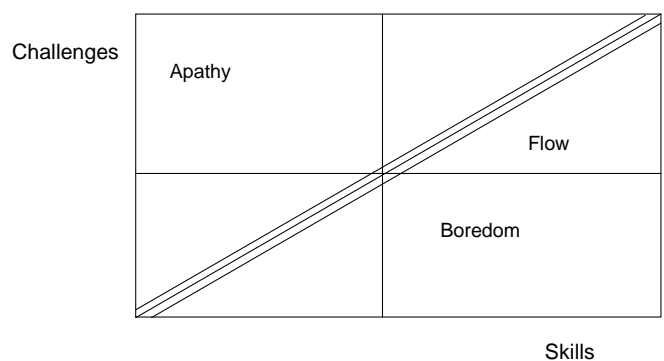


Figure 2: Matching skills and challenges: Flow

Consumers are also said to focus their attention and filter out irrelevant perceptions and thoughts whilst in a flow state (Hoffman & Novak, 1996), in which they seem to lose themselves in the environment. This is said to be a consequence of flow and can be gratifying with intense concentration. Thus, flow is seen to create a positive mood (Hoffman & Novak, 1996). Frustration however, accommodated in the model as behavioural controls and the environment (which can occur during Internet use) can change this positive mood into a negative one (Rodgers & Sheldon, 2002). This may occur when Internet use does not work out the way as one planned. For example, you may wish to buy an item off the Internet. You proceed to fill in all the details for purchase only to find you need an enabling resource, such as Java, to access the final payment step. The user then will have to find and install that enabling resource to buy the product. For many users this may be too much of an inconvenience or too daunting a task, and so their flow state will be disrupted and they will exit the session. This example shows how the absence of behavioural controls (skills and time) can derail flow, whilst at the same time they are necessary for flow to exist in the first place. Frustrations can stem from dynamic online content not working correctly as well, which is outside the control of Internet users, and can also lead to flow being disrupted and possibly ending the users' Internet session.

Presence and telepresence

The concept of *telepresence*, the mediated perception of an environment (Hoffman & Novak, 1996) merely states a term to be used to describe an environment that is provided by interaction: in this case it is the CME. This is a direct 'add-on' to what is (or was) presence – the natural perception of the environment (Hoffman & Novak, 1996). One could posit that everything is telepresent, that is, even our physical sensors are mediators between the real-world and our brains, whereas the CME is merely an extension of those sensors and provide an alternative to the real world or reality (Hoffman & Novak, 1996). The idea of telepresence (a mediated perception) lent itself to the construct of binary environments: the real one in which users are physically present and the one made up of the hypermedia CME (Hoffman & Novak, 1996). Users of the CME are said to be present in both the present environment as well as the telepresent environment simultaneously (Hoffman & Novak, 1996).

The CME environment was seen as one that lent itself to enjoyable and playful experiences (Hoffman & Novak, 1996). This idea immediately implies flow in the CME as it is an inherently enjoyable experience (Hoffman & Novak, 1996), thus telepresence and flow can be linked to each other. Depending how deeply a consumer ventured into a telepresent state as well as on the type of session they were embarking on (Rodgers & Sheldon, 2002; Sheehan, 2002) different levels of flow must exist. What must noted here is that flow and the ideas of presence and telepresence are separate and yet can be seen to complement each other; the deeper one ventures into the telepresent, the greater the magnitude of the flow experienced by the consumer and vice versa.

Therefore, as telepresence or mediated environments creates entertainment for the user, so flow emerges out of this environment by way of being a natural by-product of entertainment and interaction.

Behavioural controls

In order to use the mediated environment, certain behavioural controls must be met. These can be seen as barriers that can prevent consumers from reaching and maintaining a flow state and, to a lesser extent, entering the online world as mentioned earlier.

Firstly, the consumer will need an Internet compatible device. This can be a personal computer (Dholakia & Uusitalo, 2002), a personal digital assistant or even a cellular telephone. The technical specifications as well as how 'up-to-date' or relevant the technology is for operation of the device will result in either a positive or negative flow experience. Where the device is up-to-date, it will be fast and enable easy navigation of the Internet and provide greater flow with a positive experience. A negative flow experience will occur where the device is obsolete or slow which hinders the creation of flow by creating a frustration for the user.

The next barrier to be satisfied is the availability of a physical connection to the Internet. Telephone lines, cable and satellite links are just some of the methods to connect to the Internet. The speed and reliability of this connection can have a positive or negative effect on flow in much the same way as the Internet compatible devices mentioned above. In South Africa, consideration must be given to the effect of the "digital divide". The vast majority of South Africa's citizens still have no access to either computers or telephone lines, both of which are crucial to accessing the Internet and those that have access to both are still limited by the costs Telkom imposes on Internet activity (Chipp & Ismail, 2004).

The next set of barriers can be classed as 'enabling resources'. An Internet browser such as Internet Explorer, an Internet account, easier need fulfilment or perceived reduction of effort, as well as time set aside for Internet usage (Shim, Eastlick, Lotz & Warrington, 2001) are all enabling resources. Each one provides some sort of building block that links the user correctly to the environment, without which the experience of using it may feel like 'missing a part' or 'limping'. These too, can influence the flow of a session. Time is an interesting behavioural control in the South African context. South African users have to pay much more for Internet use in connection charges than in the USA. Thus, when a South African connects to the Internet they have the time to surf and potentially experience flow but at the same time the practicality of having to pay for the time spent on the net is a constant nagging in their conscience and will potentially limit the flow they will experience on the Internet. Thus, for certain areas money is also an enabling resource.

The skills needed to browse the Internet are also seen as enabling resources that a consumer must possess in order to gain access to the Internet as well as enabling them to have

positive usage experiences online (Hoffman & Novak, 1996). For example a novice user who has limited skills may well be concentrating on simply using the mouse correctly and not experience flow whereas a seasoned user who possesses all the necessary skills will be more likely to slip into flow as they can focus on the Internet experience solely thus making a flow experience more likely.

Socio-demographic factors also play a role in determining behavioural control and benefits in Internet shopping, especially in terms of age, income and family composition (Dholakia & Uusitalo, 2002). Dholakia and Uusitalo (2002) found that the socio-demographic factors that individuals experience directly affect their personal characteristics in terms of innovativeness, their technical schema and their level of technology readiness (acceptance versus aversion) (Chipp & Ismail, 2004). A user with high technology affinity is more likely to see the Internet as a place they will be comfortable in than a person who is technology averse. They will also be more likely to experience flow in the environment than someone who approaches the Internet with distrust or dislike.

The dynamic interplay between the main areas of e-behaviour

Discussion now moves to the various aspects of e-behaviour in context of flow and the behavioural controls mentioned above. Hoffman and Novak (1996) did not place enough emphasis on the interplay between flow and e-behaviour. So, the main facets of e-behaviour are examined next, detailing how flow mediates and is mediated by these elements.

The proposed model the authors suggest in Figure 3 is a representation of this thought process. This model addresses the flaw in Hoffman and Novak’s (1996) argument where it appeared that they skipped over the interaction that flow had with motivations, perceptions and activities of users possibly because at the time the articles was published, 1996, these issues were not explored or ‘discovered’.

Nevertheless, Hoffman and Novak do provide some discussion of perceptions and motivations. This work now needs to be augmented with developments in e-commerce research that have occurred over the ensuing eight years. In addition, the interaction these components have with flow warrants a closer look.

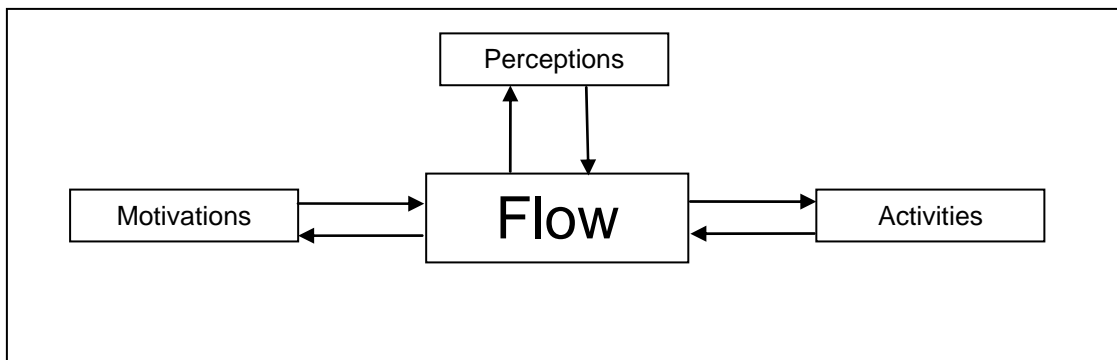


Figure 3: The dynamic nature of flow

The dynamic nature of flow is an interactive, two-way mechanism in which each construct is operated upon by it and in turn affects it. Each construct also affects the other (see Figure 1) and so there is a continually changing environment.

Perceptions

The Internet is perceived to be real (Hoffman & Novak, 1996) and as such perceptions matter in the Internet world. Users must perceive the Internet world they are interacting with as trustworthy and safe (Saban, McGivern & Saykiewicz, 2002) before they will venture into the realm of the Internet, even after they have met the behavioural controls noted earlier.

A major feature of Internet use is the ability of users to filter out what they perceive to be irrelevant information (Hoffman & Novak, 1996). However, this can be directly influenced by the flow state that the user is in. For example, a user who has just logged on may not have matched the

skills and challenges they are finding on the Internet and thus be more open to all the information being displayed to them. As they move deeper into flow and start to focus they will start the filtering process associated with flow and blot out the information they perceive is irrelevant. Sheehan (2002) noted that session type (examined later, under activities) can influence how users perceive the Internet and the information available, however they neglected the influence of flow on this process

‘Control [of the environment] comes from both consumers’ perception of their ability to adjust the CME and their perception of how the CME responds to their input, with consumer adjustment taking the form of network navigation’ (Hoffman & Novak, 1996:64-65). This adjustment of the CME is a function of the user’s behavioural control, the better a user is able to adjust the CME (that is, control it) the more conducive the CME will be to flow and the greater flow the user will feel. Network navigation (selection of links on the website) is said to be self directed (Hoffman & Novak, 1996) and so forms an element of control in the

CME. This perception of control is very important to flow. As users move deeper into flow they feel more control of their environment and may start to explore more of the Internet (Rogers & Sheldon, 2002). However, this works in two ways. If Internet users do not perceive a sense of control on the Internet, whether this is brought about by behavioural controls interfering, boredom or apathy, their flow state will be diminished as the matching of skills and challenges will not be optimum and they will begin to withdraw from the Internet and disconnect. However, an experienced or especially interested Internet user may not simply disconnect from the Internet and overcome the source of flow interruption in order to prolong the flow experience, in essence increasing a behavioural control (that is, applying their skill) to overcome a behavioural control constraint.

Returning to the example of Java mentioned earlier. The motivated or skilled user will want to complete the transaction (continue flow) and will find the solution to their problem that is, they will find the enabling resource on the net and download what they need to finish the session in spite of the lack of flow they may be feeling, which is caused by the need to find and download Java. The search for Java could lead them into another state of flow as their skills match the challenge posed by finding Java. From this example we can see the interaction of flow with the motivation to find Java and the actual activity of finding Java (Figure 3). Depending on the success of their search for Java the user will then adjust their perception of the Internet based on the Java experience (Figure 1). This describes an experience of flow within flow within flow.

An interesting perception of the Internet is that of being a time saver in the world of shopping. Alreck and Settle (2002) examined this idea and found that although many people shared the perception noted above; they felt the Internet required too much effort (a limiting behavioural control) to be a viable shopping channel (Alreck & Settle, 2002). The extra effort the users experienced in Internet shopping negated the effects of flow and brought them 'back to earth' and out of flow. Amazon have tried to cut out the effort of shopping by using 'one click shopping', which cuts out all the form filling (effort) in Internet shopping thus making the perception of the Internet a time and effort saver whilst allowing flow to continue (Chipp & Ismail, 2004). This time saving can also be contradicted by flow. Flow is said to increase the amount of time a consumer is on the Internet and so customers spend more time shopping, banking and bill paying (Alreck & Settle, 2002). At the same time, the convenience of Internet shopping is perceived to save time but does not exist to the degree many people perceive it to (Alreck & Settle, 2002). However, the time saving element, which does exist in Internet shopping, reduces flow's intensity and so the two create an average time instead of one that is very long and one that is very short. The key to convenience then is to develop online shops with both a perceived time saver and an effort saver (relaxed behavioural controls) that will allow flow to be created and maintained.

A more basic perception related to the use of the Internet is whether it can fulfil or at least help to fulfil a consumer's

need which is another behavioural control. Users who have a positive perception of Internet use (Saban *et al.*, 2002) as well as some sort of positive past Internet usage experience (Alba, Lynch., Weitz, Janiszewski, Lutz, Sawyer & Wood, 1997; Dhlokia & Uusitalo, 2002; Goldsmith, 2002; Hoffman & Novak, 1996) are more likely to derive motivations to make use of the Internet in consumption activities based on these perceptions. Thus, user motivations in e-behaviour are examined next.

Motivations

A motive can be defined as 'a desire to do something, an activated state that contains both energy and direction' (Deci & Ryan, 1985 cited in Rodgers & Sheldon, 2002:86). When looking at motivation in the Internet context, Internet users needs, behaviour and type of session that stem from their motivation are examined. All of these factors will affect the flow the user feels and will be examined in the following pages.

The Internet world is filled with different people who all have different needs. These different needs will point at the type of motivation and Internet use which they require (Sheehan, 2002) and this will lead to differing degrees of flow. Sheehan (2002) lists five needs: search needs, cognitive needs, entertainment needs, social needs and unique or new needs. Rodgers and Sheldon (2002) identify four motivations: research, communication, shopping and surfing. Again, the needs mentioned will lead to different types and degrees of flow (Hoffman & Novak, 1996).

Out of the need stems the motivation. This is graphically represented in Table 1 in a table that shows how identified needs and motivations coincide. When the situational opportunities coincide with the need, individuals are said to be most motivated (Rodgers & Sheldon, 2002). Thus the conclusion can be drawn that when the needs of the consumer match the motivations of the user an Internet session will occur. For example, when a user has surf motivations and entertainment needs a session will result represented by an X in Table 1. For each combination of needs and motivations there are differing degrees of flow (Hoffman & Novak, 1996). The matching of needs and motivations is based on the idea of functionalism (Rodgers & Sheldon, 2002).

Needless to say certain sessions will give rise to certain states of flow (Hoffman & Novak, 1996). The authors however feel that by combining motivations and needs together with behavioural controls and past experience will dictate the extent of flow. This is because flow is a function of all the above mentioned factors. A change in either one or many of them will lead to a change in flow. Certain types of users will be more susceptible to flow because they will have differing motivations, needs, behavioural controls and past experiences and thus will be open to differing states of flow (Hoffman & Novak, 1996).

Table 1: Matching needs and motivations

		Needs				
Motivations		Search	Cognitive	Entertainment	Social	Unique or New
	Research	X	X			X
	Surf	X		X		X
	Shop	X	X			X
	Communication		X	X	X	X

User types, motivations and flow

Sheehan (2002) describes three 'user clusters'. Passionates are experienced, joyful, enthusiastic, Internet innovators (Goldsmith, 2002), pragmatics are viewed as goal-directed researchers while phobics are rare users which are unmotivated, goal-directed users. Passionates will, by their nature look for new uses for the Internet and thus have a greater motivation to use the Internet for any needs they may feel. It can be deduced that as they are more motivated to use the Internet, they will feel a greater flow state than a phobic who does not want to be on the Internet and will resist its use, blocking out whatever flow they can potentially feel.

That said users must not simply be assigned to these classifications. Past Internet usage experiences and knowledge (Alba *et al.*, 1997; Dhlokia & Uusitalo, 2002; Hoffman & Novak, 1996; Goldsmith, 2002) can move a user from one classification to another and, when combined with the idea of flow, users move between user types within sessions. For example a phobic may reluctantly make use of the Internet to find some information. As they start searching they may find they start to experience flow and slip deeper into the Internet. During the session, and over time and multiple sessions, they may move from being a phobic to a passionate on the strength of the session(s) and flow they have experienced.

This process may work in reverse too: whereby negative experiences, that is, too many negative influences from various behavioural controls or poor internet experiences, on the Internet may turn a pragmatic or a passionate away from the Internet. This may be due to apathy, boredom or sheer frustration (see Figure 2). That is, a lack of flow causing them to revert to a lower state of user type.

Activities

Depending on the type of session and user type, there is a general split between activities that arise from *experience* occurring in the environment or whether the activity is specifically *goal-directed* (Hoffman & Novak, 1996). Within experiential activities the consumer will use the Internet more for the pleasure of roaming it and finding new experiences (intrinsic motivation) (Hoffman & Novak, 1996). This roaming can become ritualised which is more focussed on the medium rather than the content. Comparison can be made between the ritual potential of the Internet and

the viewing of television. Users may log on to the Internet simply because it is something that is done, much like channel hopping on television, users have no specific goal in mind when logging on but surf anyway. Roaming can also cause gratification from the medium, with many motives and unintentional, time-fulfilling orientations (Perse & Dunn, 1998; Hoffman & Novak, 1996). Getting lost in the environment is suggested by telepresence as well as flow (Hoffman & Novak, 1996) and thus telepresence leads to flow by creating the experience a user experiences on the net.

In contrast, goal-orientated activities are very much more directed and purpose specific (Hoffman & Novak, 1996). They are extrinsic and done because they have to be done. Such behaviour is accompanied by intentional and selective exposure to content and is thus more instrumental in orientation (Hoffman & Novak, 1996). None of this indicates the presence of flow. However, if the environment and usage experience are suitably favourable to the user, for example finding all the articles for an essay easily whilst online quickly and easily, then flow can well develop (Hoffman & Novak, 1996). However, there is another side to this issue. The convenience of using the Internet to find material may well be a novelty at first but as it becomes more familiar the user may well start to demand even more convenience from the present solution. Because of the extrinsic nature of goal directed behaviour, users may well have to put up with apathy or boredom because the skills required to accomplish the task and the challenges posed by the task are asynchronous. This can also be because the behavioural controls present prohibit them from having an optimum usage experience (for example, using an old PC on a slow connection without sufficient skills) and therefore not experience flow. These past experiences could very well lead to the user adjusting their perception of the Internet from the type and extent of activity in which they are engaged (Figure 1).

The amount of skill also differs between the two activities. Experiential behaviour is said to require less challenge and so a lesser degree of ability to perform it while goal-directed is seen as more complex and therefore requires more intelligence and skill to do (Hoffman & Novak, 1996). Consequently, different states of flow will result from the different behavioural controls present. For example, when just surfing the net, the amount of skill may amount to just point and click and will result in a different state of flow when compared to having to research a topic when users

may need to know the specific nuances of a search engine to get the best results.

It should be noted that there are varying contrasts between these two behaviours and they should be placed on a continuous scale – the consumer can be half way between the two, having experiential and goal-directed behaviour. The two activities can also be seen to be complementary. An Internet user may go on to the net with the goal to have an experiential encounter, for example, going on to the net with the specific goal to play a game. The user may go on to have an experience related to a specific goal, for example, listening to MP3 clips to decide whether or not to buy a CD. Both situations will lead to different flow states; in the first situation flow is expected, whilst in the second, flow may develop as the user ventures deeper into the Internet in search of MP3 clips and artist information.

As the Internet grows and new experiences and goals become available so the motivations will change as well as the user sessions (Rodgers & Sheldon, 2002). What is important to note is that this will lead to different opportunities for flow to affect user sessions in different ways. These new sessions allow for new types of flow to occur.

Table 2 summarises the two different types of activities as discussed above.

Table 2: Summary of experiential and goal-directed activities

Experiential Activity	Goal-Directed Activity
Intrinsic motivation	Extrinsic motivation
Ritualised	Instrumental
Low skill	High Skill

Specific activities and how flow operates within them will now be examined.

Surfing

Surfing can be seen as a more experiential activity, which involves exploration. Surfing is essentially visiting new sites, playing games, using instant messaging or just exploring (Sheehan, 2002). There is a certain degree of experimentation and risk taking involved. When in a flow state the user is seen to have higher experimentation (Hoffman & Novak, 1996). However, the depth of the site as well as the behavioural controls that the user is subject to limits the extent to which a user can explore a site and experience flow.

Flow is essentially what keeps the consumer locked into the hypermedia environment (Hoffman & Novak, 1996). If the consumer is kept making flow decisions to lead to another experiential environment, the extent of their flow increases and they lose all sense of self or time and so they keep surfing. This appears to be a vicious cycle as users fall deeper and deeper into the flow state, the more they flow and thus the more they surf. The point must be made that

this, again, is subject to the behavioural controls the user is subject to, a slow Internet connection or fear of an excessive telephone bill may moderate their surfing behaviour and thus their flow. An example of this would be someone who becomes fixated at Amazon's customer recommendations page when examining CDs that are recommended as appealing to their tastes. A user with a fast connection and money to burn may well become more 'stuck' in this site than a user on a slow connection with less money to spend on their telephone account.

Amazon seems to be taking the idea of flow to heart and whilst placing adverts on their site, which may or may not be noticed (Dhlokia & Uusitalo, 2002; Hoffman & Novak, 1996; Sheehan, 2002), they also allow content about products to be placed on their site by consumers in the form of recommendation lists. This generally is not seen as advertising and thus the idea of an 'ad free ad' (Klein, 2000) where advertising is perceived as consumer content and not marketing content (Bickart & Schindler, 2001). The perception created by these 'ad free ads' may cause users to venture deeper into flow. This may be due to the recommendations of other customers motivating them to move deeper into their site and still further with the presence of links to other related sites. Examples would be the opportunity to purchase the item or move to an official home page. However, if the recommendations are perceived not to match the tastes of the consumer viewing them, flow could be disrupted and the session could end.

Search

Surfing is an antecedent to searching. Surfing is the phase where skills and awareness of the new world is formed and hence Barnes and Noble established booths in their real-world shops to familiarise patrons with their virtual stores, giving them an introduction to flow as well as expecting the past behaviour (Dhlokia & Uusitalo, 2002) in the store will result in the customer making use of their online presence at home. Here again, a perception leads to a motivation, which, in turn, leads to an activity.

The Internet is seen as a vast information base from which consumers can search for almost anything they desire (Shim *et al.*, 2001; Goldsmith, 2002; Ward & Lee, 2000; Parasuraman & Zinkhan, 2002). So much so that '72% of Internet users have been found to use research products once a month' (Shim *et al.*, 2001:2), indicating that a high percentage of consumers are using the Internet to search. Internet searching needs to be seen as an intuitive, easy and enjoyable (Sheehan, 2002) search service used to find advertising of products, services or consumer content (Shim *et al.*, 2001) on price and non-price information (Parasuraman & Zinkhan, 2002). From this, searching needs to encourage flow which will lead the consumer to move on to another site. Alternatively, if flow is disrupted or not present, users will finish their Internet session (Hoffman & Novak, 1996). This may be because the user's skills may not be up to the challenge of searching or maybe some other behavioural controls are exerting their influence. Searching is seen as more goal directed than surfing (Sheehan, 2002; Shim *et al.*, 2001) and has been viewed as a consequence of surfing, which serves to hone consumers' Internet skill

before they move on to searching. Internet searching can be seen to grant unlimited freedom in choice and control when compared to traditional media (Hoffman & Novak, 1996). This is regarded as a much wider choice rather than unlimited because there are restrictions of behavioural controls, effort and informational availability\overload which are all potential flow disrupters.

Searching is more of a goal-directed behaviour (Hoffman & Novak, 1996) which is affected by beliefs, attitudes, technology readiness (Chipp & Ismail, 2004), store image and to some degree, the norms surrounding the product being searched (Shim, *et al.*, 2001). All of these factors will conspire to either lead the consumer into flow, or away from it and at the same time flow will moderate these factors in either a positive or negative manner depending on the experience the consumer endures.

Content and search providers should try to ensure flow by not providing too much information as this information overload will deter consumer adoption of Internet search (Alba & Lynch, *et al.*, 1997) by ensuring the necessary behavioural control is present thus ensuring flow. This can be done by providing a few results at a time, so as to not overwhelm the user, or by using intelligent search agents that return only the most relevant search results. Information search is seen as a very important factor in determining the success of a purchase (Shim *et al.*, 2001) as well as perceived behavioural control and credibility of the information (Ward & Lee, 2000). Credibility could be reduced by the effect of cybercrime (Saban *et al.*, 2002) as the perceived risk will prohibit the users from either considering the Internet as an information or shopping tool as well as making the prospect of flow less appealing. If the search experience was bad or ineffective, the purchase is likely to be judged so as well. The search is crucial as it sets up the grounding for a successful purchase (Shim *et al.*, 2001).

Ongoing search is associated with enduring involvement with the CME while pre-purchase search consists of a situational involvement (Hoffman & Novak, 1996). The search, with an effect of diminishing returns, will be concluded when the marginal benefit of searching another site equals the marginal cost involved in finding the product (Alba *et al.*, 1997; Shim *et al.*, 2001). This effect is seen to happen quite quickly (Alba *et al.*, 1997). However ongoing search can be seen as a function of flow. If a user finds the challenges of keeping up to date with a specific topic of interest match their skills, ongoing search will be more likely than if there is a mismatch between the two.

Shim *et al.* (2001) noted that search plays a critical role in determining the successful completion of online purchase. The authors agree with their research but feel that the extent to which flow is present is also a key variable. If the user has a poor search experience, a lack of flow, they are more likely to purchase off-line. However, if the search process is accompanied by a strong sense of flow, the user is more likely to 'flow' onto the purchase phase (Hoffman & Novak, 1996). It is noted that this flow into the next stage of purchase is governed by behavioural controls such as access to credit cards (Chipp & Ismail, 2004), browser

compatibility and many other factors. The 'Shop' section of this paper will show that often flow 'crashes' at the point of purchase.

Flow can help us understand the role different properties of goods have play in search. These properties are search, experience and credence, which affect the search process (Shim *et al.*, 2001). Search goods are easily assessed prior to purchase in terms of quality but experience goods' quality is only really known after purchase (Alba *et al.*, 1997; Shim *et al.*, 2001). Credence goods are difficult to evaluate before or after purchase (Alba *et al.*, 1997). Search goods are better for online shopping while the experience good is better when there is an abundance of information about that product (Bickart & Schindler, 2001). But why is this so? Where there is an information rich environment that is easy to navigate and understand, consumers can easily slip into flow and thus accumulate a large amount of information on search goods (Amazon's recommendations spring to mind). But the Internet can also provide some information regarding experience goods, MP3 clips and consumer testimonials (Bickart & Schindler, 2001). This can give an idea of the experience goods' qualities. If this information is easily accessible and understandable, as in the search goods example, flow will occur and consumers will, again, find a large stock of information.

Shop

Online buying is cited as an important part of Internet use (Goldsmith, 2002). With regards to Internet shopping, of the customers in the USA who visited the site and wished to purchase, 55% abandoned the sale before the checkout and 32% abandoned the sale when they got to the checkout. Overall, 2.8% to 3.2% of "hits" to the sites in the USA are converted into sales (Shim *et al.*, 2001). Only 45% of South Africans online have made a purchase via the Internet (Carr, 2003). Site problems, such as the need to download plug-ins to complete transactions at the point of purchase as well as technical errors, were given as reasons to pull out and not a disinterest in the purchase (Shim *et al.*, 2001). All of the reasons stated are behavioural controls that can be seen as flow killers as they disrupt the challenge of a website, technical errors, as well as the skills of the user, downloading plug-ins the user may not understand or want. The privacy policy of the web site was also given as a reason to pull out of Internet purchases (Shim *et al.* 2001). This is more a personal disruption of flow as it can not be viewed as a challenge or a skill and has more to do with a consumer's state of mind, though it does disrupt the flow a user may have been feeling up to that point. On the other hand a well developed privacy policy that is well written and easily understandable can lead to increased user trust (Gallo & Hancock, 2002) and may lead to increased flow through greater trust the user feels towards the online shop.

The purchase decision depends on whether the customer likes to be online, a function of whether they feel flow at that moment or not, but there are also other limitations on purchasing the product such as security (Parasuraman & Zinkhan, 2002; Saban *et al.*, 2002; Shim *et al.*, 2001), time and convenience restrictions (Alreck & Settle, 2002), access to credit (Chipp & Ismail, 2004), how easy it is to search

and find the correct product (Alreck & Settle, 2002; Shim *et al.*, 2001). Privacy will become more difficult to maintain in the information age as this information moves more toward the public domain (Parasuraman & Zinkhan, 2002). The shopping method that consumers choose will change based on product category (Parasuraman & Zinkhan, 2002) and influences the perceived risk on performing that method.

Suggestions for further research

The individual components of the model still need to be investigated. The authors suggest structural equation modelling as means to continue research into the flow construct and discover further management implications for website design and better e-commerce solutions.

Conclusion

Flow, as outlined by Hoffman and Novak (1996), was seen as a rather one-dimensional tool to understand e-behaviour. It was seen as something that occurred during Internet use and that could change (Hoffman & Novak, 1996). Hoffman and Novak (1996) seemed to leave out the dynamic interplay between flow and the major facets in e-behaviour. The paper shows that flow ebbs and flows depending on the influence that it had on e-behaviour as well as the influence e-behaviour had on it and the degree to which behavioural controls allowed it to function. Sheehan (2002) noted that individual's online behaviour has a "complex nature" and it would be state the obvious by saying that behaviour is not merely complex, but extremely complex and that looking at it in the context of a relatively new and unknown environment, namely the Internet, only makes the analysis of behaviour more challenging. We do feel that by expanding on Hoffman and Novak's original body of work we can look at e-behaviour in a new light and hopefully helped to expand the subject, thereby helping marketers to harness the e-environment to better serve consumers.

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