

Chapter XLI

Measuring Online Flow

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BACKGROUND

Examination of the flow construct began almost 20 years ago. Csikszentmihalyi has written extensively on this notion, loosely described as attaining an intrinsically enjoyable “optimal experience” (Csikszentmihalyi, 1977, 1990, 1997). Flow requires people to be completely and totally immersed in an activity. Time will stand still and nothing else will seem to matter (Mannell, Zuzanek, & Larson, 1988). Flow is important because it has a relatively clear set of antecedents and consequences that have significant implications for Web commerce.

While flow has been studied in a broad range of contexts including sports, work, shopping, games, and computer use, researchers are only now beginning to study flow during consumer Web navigations. Hoffman and Novak (1996) have ascribed the flow experience to Web behavior, measuring the loss of self-consciousness in an essentially blissful encounter. In this situation, flow is defined as the state occurring during Web navigations characterized by (1) a seamless sequence of responses facilitated by interactivity, (2) an intrinsically enjoyable experience, (3) accompanied by a loss of self-consciousness that is

(4) self-reinforcing (Hoffman & Novak, 1997). Web consumers who achieve the flow experience are so acutely involved in the act of online navigation that thoughts and perceptions not relevant to navigation are filtered out completely: the consumer is immersed in the computer-mediated interaction. Self-consciousness disappears, the consumer’s sense of time becomes distorted, and they achieve an internalized sense of gratification (Novak, Hoffman, & Yung, 2000).

One of the most comprehensive and methodologically sound measurements of online flow was recently conducted by Novak et al. (2000). These researchers utilized a structural modeling approach to test a model of flow that embodied multiple antecedent components. Additionally, the researchers combined multiple past studies into a wide-ranging measurement instrument. The instrument contained sets of variables measuring flow (directly), focused attention, involvement, playfulness, positive affect, skill, telepresence, and time distortion. While a few scale items were dichotomous, most were intervally scaled Likert-type questions. The researchers used data collected from a large sample, fit a series of structural equations, and also tested relationships with key consumer behavior and Web-usage variables.

RELIABILITY

Research supports the model of online flow. Confirmatory factor analyses show appropriate levels of goodness-of-fit and root-mean-squared errors of approximation. Further, composite reliabilities estimated from the model (as well as from the revised model) were greater than 0.75.

VALIDITY

The data support the construct validity of the online flow scale. The model has been cross-validated using multiple samples. Moreover, the model has been used to accurately estimate relationships with outcome variables such as Web shopping and various Web applications.

RESULTS

Essentially, the work of Novak et al. (2000) provides empirical evidence and establishes reliability and validity in a comprehensive framework. A compelling online customer interface (i.e., a flow experience) was found to correlate with fun, recreational and experiential uses of the Web, expected use in the future, and the amount of time spent online. However, flow was negatively associated with using the Web for work-related activities. Interestingly, greater online “challenge” corresponded to greater focused attention, alluding to the importance of Web site design. Contrary to hypotheses, higher levels of interactive speed were not associated with greater levels of flow.

COMMENTARY

No doubt precise measurements of such an imprecise Web-consumption phenomenon are extremely difficult. The difficult, elusive, and perhaps ethereal, Internet flow concept *can* be

accurately measured and modeled. Novak et al. (2000) do an excellent job in synthesizing past research, applying it to the Internet context, and modeling antecedents and consequences. It seems that where their research falls short is in the evaluation of Web site design as a facilitator of flow. Researchers have just begun this next step in understanding flow, that is, to study the effects of consumers entering (and Web sites facilitating) the flow experience, as well as understanding the intricacies of Web navigation while in flow (see Richard & Chandra, 2005).

LOCATION

Novak et al.'s (2000) work on measuring and modeling the flow concept can be seen in *Marketing Science*, 19(1), 22-42.

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