The business concept of utilizing the interactive TV

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Abstract

**Purpose** – This study seeks to explore the possibility of adopting the interactive TV (iTV) as an alternative for the PC at the user-end and also to explore the corresponding practicability for any firm which wants to play an active role in the commerce associated with the iTV.

**Design/methodology/approach** – Through investigating the available literature related to the architecture and commerce of the current iTV in detail, this study explores the possibility and practicability of adopting the iTV as an alternative for the PC at the user-end.

**Findings** – There is a feasibility for providing the direct interactivity between viewers and any firm – the feasibility that is (conceptually) ignored or (physically) blocked in the current iTV architecture. The proposed business concept emphasizes that this feasibility should be available to the firm which wants to play an active role like that in the B2C e-commerce.

**Research limitations/implications** – There is a limited literature about the architecture and commerce of the current iTV. Furthermore, the corresponding business environment of the iTV is not mature, and thus there are hardly any relevant and reliable empirical data available.

**Practical implications** – This study describes a practicability for any firm which wants to play an active role in the commerce associated with the iTV.

**Originality/value** – This study pioneers the commerce associated with the iTV from the perspective of media commercials and any firm not in the iTV value chain, and thus opens up a practicability for the firm which wants to play an active role in the iTV commerce.

**Keywords** Electronic commerce, Business-to-business marketing, Television, Value chain

**Paper type** Conceptual paper

1. The internet-connected television and predicaments of B2C e-commerce

Although the business-to-consumer (B2C) electronic-commerce (e-commerce) has gained its popularity for many years and thrived in various business markets, the struggling in expanding the PC-owning population and the ineffectiveness of associated advertisements erode the prosperity. In general, the B2C e-commerce can reach only the consumers who habitually browse and read (text and graphic) messages via keyboard, mouse and desktop/laptop PC (Kim and Eom, 2002). The majority of these PC consumers are young generations, not the general consumers of all ages, and the pace of expanding the population of PC users is rather slow. By contrast, the television viewers are more likely the general consumers, almost half of who are not PC users[1].

Furthermore, fantastic advertisements on the television can be broadcasted to a mass audience at a time epoch with a better advertising effectiveness than those advertisements on PC (Newman et al., 2004). Dreze and Hussherr (2003) point out a banner advertisement, commonly used in the www, typically has a probability of about 50 percent of being seen by a surfer looking at a page in which the banner is embedded. This number is dramatically lower than the 97 percent reported for television ads or 93
percent for Yellow Pages advertisements. It seems that using the internet-connected TV as a portal to B2C e-commerce is an alternative for solving predicaments of the B2C e-commerce.

The interactive TV (iTV) is an available internet-connected TV, and the term T-commerce gradually emerges in academic and practical ways (Press, 1993; Chitty, 1997; Haley, 1999; Hogan, 2000, Pramataris et al. 2001; Kim and Sawhney, 2002). For example, the iTV viewers are able to buy products they see on television screens which act as the primary portal for shopping (Fitzgerald, 2001).

To address the predicaments of the B2C e-commerce, this study explores the possibility of adopting the iTV as an alternative for the PC in the user-end. This study also explores the practicability for any firm that wants to play an active role in the commerce associated with the iTV. We attempt to provide any firm a business concept of utilizing the iTV. In addition, the corresponding value drivers of the proposed business concept are described.

Note that, compared with the academic literature and empirical data of the e-commerce, however, the counterpart of the current commerce associated with the iTV is very limited[2]. Furthermore, there are no studies that instruct any firm how to utilize the iTV to play an active role like that in the B2C e-commerce.

In the following sections, we will first explore features of the iTV through the literature review. The proposed business concept is then given. Section 4 provides discussions of the value drivers for building personalized relations between individual customers and the firm where transactions are conducted. Managerial implication and future work are given in the last section.

2. Features of the iTV
Kim and Sawhney (2002) describe the TV as a “one-way electronic medium for transmitting visual information to large audiences”, “a mass medium for delivery of information in the form of news, entertainment and advertisements”, and merely “a dumb terminal with minimal intelligence limited to on-off and channel tuning functions”. Because of the TV’s one-way nature, as shown in Figure 1, pre-determined routes of program participation and access structure the viewing experience, and the TV architecture maintains a centralized hierarchical one.

![Figure 1. The TV model](image)

Source: Kim and Sawhney (2002)
Kim and Sawhney (2002) further recognize the iTV as a modified TV machine with a little more intelligence in the form of yes-no polls, multiple-choice responses, and other such options which offer limited interactivity. As shown in Figure 2, the iTV architecture is also centralized in media servers.

In the application perspective, Office of Communications (2001) identifies the iTV service with the ability of viewers to interact with TV programs either by changing the content which appears on the screen or by providing information to the broadcaster through a return path. Pramataris et al. (2001) mention that applications of the iTV have ranged from simple ideas to complex interactive services. For instance, from better viewer feedback and greater flexibility in choosing programs to fully interactive experiences akin to those implemented on the www[3]. Kim and Sawhney (2002) claim that the iTV can work as an information and communication platform that provides broadcasting channels, video-on-demand, home communication services such as telephony, home-shopping, and banking, information retrieval services, interaction between the users, and so on.

Pramataris et al. (2001) also give some ideas about the iTV programming and the associated interactive content. The iTV programming can be simple productions with additional interactive contents – the contents that include anything enhancing the viewer’s appreciation of TV, for example, local news headlines, sports scores, program line-ups, links to web sites, public opinion polls, etc. To an extreme, during an interactive show, banner advertisements or other clickable graphics (e.g., an icon or a button), which can be constantly displayed, allow the viewer to initiate the interactive experience. Different kinds of iTV programming and interactive contents invoke different levels of interactivity from the viewer[4].

**Figure 2.** The current iTV architecture

Source: Kim and Sawhney (2002)
The iTV advertising follows the same principles, integrating the advertisement with the interactive content (Pramataris et al. 2001). The interactive content associated with an advertisement could contain answers to specific questions about the advertised products or services, could offer viewers free product samples (e.g. one-minute movie preview) or the possibility to arrange a product trial (e.g. test drive a car), and could even support the viewer throughout the purchasing process by allowing for direct ordering and after-sales support.

3. The proposed iTV business concept

From the iTV architectures shown in Pramataris et al. (2001) and Kim and Sawkney (2002), we can conclude that the main players in the current iTV business environment encompass advertising agencies, content producers, broadcasters, and local network service operators[5]. Furthermore, the advertising agency designs and creates advertisements, the content producer creates and owns contents, the broadcaster does the programming and provides the broadcast service, and the local network service operator knows the viewers (data). One of the possible iTV value chains is shown in Figure 3.

Note that there is a feasibility of providing the direct interactivity between the viewers and the firms, because the iTV is internet-connected. But this feasibility may be (conceptually) ignored or (physically) blocked in the iTV architecture. Without this feasibility, the iTV commercial environment is framed within a “walled garden”[6] constructed by the media commercials and, in the perspective of any firm not in the iTV value chain. The iTV is merely a channel for marketing and improving public relationship.

The direct interactivity between the consumers and the firms is widely recognized as the feature of commercially exploiting the internet (Barnes and Vidgen, 2003; Chiang and Chong, 2004); thus, our proposed business concept punctuates the direct interactivity between the viewers and any firm shown in Figure 4. This feasibility should be available to the firm which wants to play an active role like that in the B2C e-commerce.

Figure 3.
The iTV value chain

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For the main players in the iTV business environment, the great potential of the iTV rests in the capability of better understanding the viewer's behavior (in terms of advertising agencies, content producers, broadcasters, and firms), conducting transactions with individual consumers (in terms of broadcasters and firms), and building personalized relations with individual consumers (in terms of broadcasters and firms).

The iTV viewer can directly access relevant information and other services being just "one-click" away. At the time epoch of clicking, the interactivity information accompanying by personal profile (or group profile) should be collected by the information system of the local network service operator. The interactivity information contains the channel feedback message, the advertisement feedback message, the content feedback message, and the product feedback message. In other words, the local network service operator could act as an information aggregator.

To better understand the viewer's behavior, the broadcaster could collect and analyze the channel feedback messages from all local network service operators to have a better understanding of the channel viewing rate. Similarly, the advertising agency could collect and analyze the advertisement feedback messages from all local network service operators to have a better understanding of the advertisement viewing and clicking rates. The content producer could collect and analyze the content feedback messages from all local network service operators to have a better understanding of the content viewing and clicking rates. The firm could collect and analyze the product feedback messages from all local network service operators to derive some valuable information for further product design, marketing and pricing.

Some broadcasters or firms may conduct transactions conduct. If the broadcaster conducts the transactions, it acts as a shopping channel; otherwise, it acts as a marketplace and may charge (viewers or firms) a transaction fee. It seems that, due to the resource constraints or business strategy, some broadcasters choose the role of a marketplace instead of a shopping channel. In this perspective, the iTV business environment allows the direct interactivity between the viewers and any firm not in the iTV value chain.

4. Value drivers for firms to strength personalized relations with individual viewers
The following discussions are applied to the firm that utilizes the available feasibility of direct interactivity with viewers and directly manages viewers' viewing experiences and transaction processes.

![Diagram](image)
The direct interactivity provides the firm a feasibility of implicitly collecting the viewers’ information through their interactive online behaviors. Based upon business objectives of the firm, the viewers' interactive experiences should be analyzed. The analysis results can help firms customize the iTV contents of the product/service delivered to individual viewers. Furthermore, the analysis results can help firms design better marketing, pre- and post-sale strategies, which are accountable for more competitive products/services and better financial outcomes:

The delivered iTV content has the following four characteristics, and each of them can be referred as a (customer) value driver of the proposed iTV commerce:

1. **Appeal.** Through managing the graphical, textual, audio, and video information and internet connection, the iTV enables a better “audiovisual” presentation, a better delivery of both verbal and nonverbal information, and the feasibility for viewers of making face-to-face communication with firm’s sales or service people. That is to say, the iTV viewers can perceive a better appealing theme than solely from TV or traditional web sites. Thus, for instance, the iTV viewers can do the window-shopping in various “iTV-malls”. Hogan (2000) states that viewers enjoying with the TV programs tend to buy more. Thus, viewers enjoying with the iTV contents tend to buy more.

2. **Direct interactivity.** For instance, while an appealing mobile phone advertisement with an embedded URL information is showing at the iTV, you can use your remote control to link to the associated web site, and further watch other relevant advertisements and demonstrations[7] for detailed information, online request for more information, or initiate a purchase process. Through the iTV, the firm can also offer post-sale services by prompting viewers with an on-screen e-mail for reminding them to visit related web pages for product help, instructions and tutorials.

3. **Accessibility of information.** With the internet-connected, the iTV allows individual viewers to navigate among immense www contents as long as they want. In addition, the iTV also enables viewers to access information nonsequentially, in contrast to broadcast-natured TV (Bornman and von Solms, 1993), and to determine not only the information they would like to view, but also the time of viewership (Rust and Oliver, 1994).

4. **Customization.** The iTV viewers can be addressable. Thus, the enterprise web site can detect whether the customer is connected through the iTV and which customer category the viewer associates with. Based upon the viewer's addressability and profile analysis, the firm can deliver tailor-made iTV contents to different types of viewers (Blattberg and Deighton, 1991). Moreover, the firm can further customize its sale processes to guide the viewer easily placing his/her orders online. Similar process customization also can be applied to the post-purchase activities.

Accordingly, firms should re-engineer their selling chains to provide the viewers the full end-to-end customer service, a service integrated with the push and pull activities and covered from the advertisement, the pre-sale, the sale, to the post-sale (Ahn et al. 2003; Deise et al. 2000)[8]. As shown in Figure 5, the details are given below:
(1) **Make the advertisement management.** The firm should make the advertisement management itself. Based upon the analysis of collected viewing experiences, the firm can identify advertisements and demonstrations that attract more eyeballs of some segment of viewers. Then the firm can deliver the customized advertisements and demonstrations more effectively such that viewers are willing to trigger the order procedures online when they watch the advertisement or demonstration. In a sense, there will be a huge amount of advertisements and demonstrations, and thus a management is required.

(2) **Strengthen the customer relationship management at the pre-sale stage.** The customer relationship management at the pre-sale stage can be enhanced to serve customers and assist the sales team. For instance:

- **Improve relationships with the iTV viewers.** The firm can enhance the iTV viewers' shopping experiences through the customized advertisements and demonstrations. Such positive shopping experiences can help the firm maintain a better relationship with the iTV viewers. In addition, the firm can effectively make the push action to the targeted viewers by reminding them the up-to-the-minute information of bundled products and services, promotions, and complementary products. The firm can also online offer more proper and timely iTV contents based upon viewer requests.

- **Assist sales team.** Customer data collected and developed in other departments can be shared with sales teams for more effective push action. Therefore, the firm should maintain the mechanism that integrates the collected viewing experiences with the information provided from other departments to assist the sales team.

(3) **Handle orders from the iTV viewers.** The firm can expand the mechanisms implemented for the B2C e-commerce to the iTV viewers. For instance:

- **Provide online order forms for the iTV viewers.** The firm can provide online order forms and alternative fulfillment strategies to handle products/services inquiries.

- **Make the ordering process easier for the iTV viewers.** The firm should provide superior ordering support, for example, by enabling online salesperson services on the iTV.

![Figure 5](image-url)

The firm's end-to-end service management of selling chain associated with the iTV.
5. Managerial implications and future work

It seems that the commerce associated with the iTV can be conceptualized in the following three perspectives:

1. from the tool perspective – the firm uses the iTV as a vehicle for the B2C commerce;
2. from the viewer perspective – the iTV viewers can easily online get/pass more information, order products, request services, and make the payment; and
3. from the corporate perspective – the application of the iTV is the providing of products/services and the conduct of marketing, pre-sale, transaction, and post-sale activities through the channel of iTV to viewers.

As Weill and Broadbent (1998) mentioned, there are four fundamentally different management objectives involved with investing in information technology:

1. infrastructure;
2. transactional;
3. informational; and
4. strategic.

The firm that is the first mover of investing the iTV in its industry can gain the strategic competitive advantage. Sooner or later, the competitors will copy the iTV arrangement and have the me-too effect. The iTV then becomes the transactional one in the industry, and then the infrastructure for the industry; that is, shared service. At the transactional and infrastructural stages, to have further competitive advantages, the firm should make a differentiation based upon the distinct leverage of the value drivers of the iTV from its competitors.

The e-commerce experience told us any traditional value chain can be disaggregated and reaggregated to nurture the true core of the business (Kalakota and Robinson, 2001; Murillo, 2001; Kao and Decou, 2003). We envision a potential commerce boom based upon the proposed iTV business concept and an evolution on value chains of all industries.

The iTV issue is new to all academic fields which are not involved in the TV/iTV value chain. Thus, there are lots of studies need to be done in order to provide a clear understanding of the iTV and the corresponding business concept. We agree that these studies should cover not only the viewer and the media industry but all consumers and all industries. Here we merely provide an introduction of the iTV business concept to all industries. The other studies are future work.
For example, the discussion of technological barriers to media commercials' information systems and firms' web sites and corresponding solutions is an important issue for the MIS professional. We recognize it as a future work since there are lots of involved factors, including the viewer viewing, browsing and buying behaviors.

The differentiation based upon the unique leverage of value drivers does not lead to a competitive advantage unless it is valuable to the buyer. A successful differentiator should try to create values for viewers that yield a price premium in excess of the extra cost which are required for a delicate arrangement of iTV contents. The discussion of controlling the extra cost associated with leveraging value drivers is not under the scope of this study, but should be done in the future.

Notes
1. While only 50.5 percent of US households have access to the internet, 98.2 percent of US households have TV sets at home with the average of 2.4 TV sets (US Census Bureau, 2003).
2. In fact, the corresponding business environment of the iTV is not mature and there are hardly any relevant and reliable empirical data available.
3. For example, vast amounts of information exchange between customers and web sites.
4. The philosophy and nature of the iTV programming depends on the (extra) underlying (system) architecture and the (extra) platform for interactive content development and distribution.
5. Note that, the local network service operator is not the iMEDIA service provider mentioned in Pramataris et al. (2001), because the local network service operator merely delivers the iTV program and advertisements and collects the interactive information from viewers. The iMEDIA service provider, on the other hand, should coordinate “interorganizational processes in order to support interactive personalized advertisement campaigns” and exploit “consumer profiles and interactive information by controlling it and making it available to other actors” (Pramataris et al. 2001, p. 8).
6. By contrast, customers can access all the resources available online in the www and make any available transaction with any firm as they wish. In a sense, the current B2C e-commerce is framed within a “wild forest” in the cyberspace.
7. According to Heiman and Muller (1996), there are four basic types of demonstration: first dealer’s showroom/salesperson’s demonstration, secondly dealer’s showroom/consumer’s demonstration, thirdly consumer’s office/salesperson’s demonstration, and finally consumer’s office/consumer’s demonstration. The iTV demonstration belongs to the type of dealer’s showroom/salesperson’s demonstration.
8. In the current commerce associated with the iTV, such end-to-end customer service may be provided by some media commercials in the iTV value chain.

References


