

Assessing Value Creation and Value Capture in Digital Business Ecosystems

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Abstract

Interest in business modeling of technology enterprises – the activity of designing the architecture for revenues, costs, products and/or services delivery and the overall value of an enterprise – has risen to prominence with the global crossing of the Internet chasm. However, as several studies have pointed out (c.f., Osterwalder, Pigneur & Tucci, 2005; Teece 2010; Zott & Amit, 2010), the investigations of business models and their fit with the strategy of an enterprise, have received little scholarly attention. In this article we formulate a framework, called ADVISOR, for modeling the business strategies of enterprises in the Interactive Digital Media (IDM) industry. We focus on how IDM de novo firms could use the ADVISOR framework to assess their value creation and capture potentials in their respective digital business ecosystems.

Keywords: digital business models, strategy design, value analysis, business modeling, Interactive Digital Media, start ups.

I. The Interactive Digital Media Ecosystem

Interactive Digital Media (IDM)¹ refers to the use of technology to deliver digital, broadband, interactive, and content-intensive services and associated applications to consumers using the Internet. Examples of digital products and services include music, on-demand videos, online games, mobile applications, eHealth records, rich media courseware, and other digital archives. The nature of products and markets in such an industry is typically characterized by: 1) low-cost, high-velocity reproduction and distribution of digital products and services; 2) increasing social media and network effects that significantly impacts consumption patterns; 3) complex technological requirements for intellectual property and digital rights management. The IDM industry is also notably dominated by the frequent entry and exit of new or de novo firms.

The value-chain in the IDM industry typically moves from content production to various roles over a technical platform that allows syndication, aggregation, and distribution before reaching to consumers. A variety of significant stakeholders such as platform sponsors and providers, brokers, advertisers and regulators interact in complex ways for content production, syndication, aggregation, and distribution. Like in a biological ecosystem, the interaction between the different players in the IDM ecosystem creates value that is appropriated by the consumers and different players in the ecosystem (Iansiti and Levien 2004).

With increasing competition, technological growth, and the near universality of access to the Internet, the IDM industry structure is constantly impacted by transformational forces leading to a turbulent operational environment (Pavlo and El-Sawy 2006). Therefore, with the turbulent, transformational forces, the IDM business ecosystem becomes a collection of vulnerable markets, characterized by: (1) ease of entry; (2) attractive to attack, and (3) difficult to defend. When a

¹ The Interactive Digital Media industry has also been referred to as the Networked Digital Industry and New Media Industry, among other terms.

marketplace becomes vulnerable to such turbulence disrupting the existing ecosystem, business modeling and design are critical criteria for entry as well as survival of de novo firms. If there is one significant lesson to be drawn from the aftermath of the dot com boom and bust of a decade ago, it is that sustainable business models and strategy design are not out of fashion no matter what popular thinking may have been (Teece, 2010). However, there is a dearth of rigorous research on business modeling and strategy design especially with respect to de novo firms entering a constantly transforming market (Zott and Amit 2010).

This study contributes to the literature on business modeling and strategy design of de novo firms by developing a theoretically grounded conceptual framework to analyze how new IDM firms may enter turbulent markets and formulate their growth strategies using business modeling².

II. Value Creation and Capture in IDM Ecosystems

Neo-classical economics takes the natural order of things to be that innovation creates uninhibited value through intellectual property protection and the innovating firm captures value by selling its innovation in markets for the highest revenue possible (Teece, 2010). Ignoring public goods and free-riding, the premise is that if value is delivered, customers will pay for it at competitive prices. Such conventional thinking also ignores the role of intermediaries and the interactions among the intermediaries that in turn create (and capture) further value, which is common in digital business ecosystems. An alternative to the neo-classical economic view is the value-based strategy literature (Brandenburger and Nalebuff 1995; Brandenburger and Stuart,

² A business model is distinct from business strategy. Zott and Amit (2008, p.5) define strategy as “a pattern of managerial actions that explains how a firm achieves and maintains competitive advantage through positioning in product markets”. In contrast, the business model is “a structural template of how a focal firm transacts with customers, partners, and vendors” (p. 5). In other words, while strategy mainly focuses on the firm’s positioning vis-à-vis its competitors, the business model places the interactions and economic exchanges among players within the marketplace in the centre of considerations.

1996), which offers a theoretical lens that is more appropriate to analyze business ecosystems. At the focal point of a value-based analysis is a Value-Net, a firm's relationship network involving customers, suppliers, substitutors (direct or indirect competitors) and complementors (active or passive partners), which determines the value that a firm creates for the market it serves. Correspondingly, the value that a firm captures from the market is also determined by the way the total value captured is shared among the ecosystem players – notably intermediaries such as platform providers, financial brokers, syndicators, aggregators, distributors, and consumers. Such a Value-Net analysis and the dynamics of value created and value captured can then be used to develop the business strategy of particular firms in the Value-Net.

III. The ADVISOR Framework

Drawing inspiration from the value-based strategy literature, we extended the VISOR³ framework into what we call the ADVISOR model to help identify and articulate value created and captured in IDM ecosystems. ADVISOR consists of seven business modeling elements that need to be considered by firms providing a digital product or service – Adoption by Consumers, Disruptive Innovation, Value Proposition, Interface, Service Platform, Organizing Model and Revenue/Cost Sharing. The framework is a business modeling tool developed to define how companies can react, evaluate and capitalize on the emergence of new technology or service offering in the IDM ecosystem. For example, if a service is not profitable, the business modeling methodology based on ADVISOR systematically helps the service provider to analyze adjustments to resource allocation and operational activities pertaining to any component of the model, such as the service platform or organizing model, to deliver the service more attractively

³ The ADVISOR framework was developed and applied to the IDM ecosystems based on prior experiences with an earlier business modeling framework known as VISOR, which was developed by Omar El-Sawy and his co-workers and used at the Center for Technology Management (CTM) of the Marshall School of Business at the University of Southern California. VISOR was extensively used to help innovative service firms to systematically understand and shape their strategies to provide a profitable and sustainable service.

to customers and thereby enhance the value proposition. Fundamentally, the ADVISOR framework helps a firm understand how it could enter, grow and sustain its business using appropriate business models and strategy. While not a predictor of success, it nevertheless alerts a firm to the “dangerous intersections” in the firm’s growth path.

Table 1: Elements of the ADVISOR Framework.

Elements	Descriptions
Adoption by Customers	Adoption addresses the maturity level of customers, whether or not the digital product or service has crossed the chasm from low volume - high margin to high volume - low margin. It also includes the spillover effects of adopting the digital good or service to beyond the boundaries of the ecosystem. For example, if users of a social media network trade and exchange real goods and services, it has the equivalence of a network effect that brings greater value to the market. Value that may be captured by the players in that market.
Disruptive Innovation	Disruptive innovation happens when a firm cannibalizes its own (in this case) bricks-and-mortar products or services in order to create new lines of businesses that are expected to be more profitable. It also incorporates the role of game changers who may be new players and innovators who wish to carve a role in the market space. Disruptions are not always benign or opportunistic. If unleashed by players with hidden agendas or unsustainable models, disruptive innovation can be a value destroyer (eg. Freemium).
Value Proposition	The value proposition addresses why a customer will value an offering and pay a premium price for it. In general, customers who use IDM products or services choose to do so for hedonistic, utilitarian or social benefits. This proposition is usually accompanied by a good story about why particular customer segments would value the firm’s products and services and be willing to pay a premium price for them.
Interface	The relative ease of use, simplicity, convenience, intuitive nature, and aesthetics of the user interface are important factors of an offering. This interface is typically a web portal with a graphical user interface that is controlled by the enduser on devices ranging from smart phones, tablet PCs to desk-tops and high-end virtual reality systems. The success of delivery of a product or service is heavily predicated on the user interface experience in terms of ease of use, simplicity, convenience, and positive energy that it generates. A great value proposition with a rickety user interface experience is not viable, and similarly a great user interface can significantly alter the value proposition.
Service Platform	These include IT infrastructure (network, hardware and software) and architecture that enable delivery of digital products and services. For example, the end-to-end connectivity provided over a 3.5G mobile network, which allows the downloading or streaming of video clips to a host of on-the-

	move or in-the-room devices. These IT platforms enable, shape, and support the business processes and relationships that are needed to deliver the products and services, as well as improve the value proposition. Enabling service platforms becomes an increasingly critical component in IT-intensive environments. In IDM markets, the commonality of platforms across partners joining to deliver a service is a critical enabler.
Organizing Model	This element defines how a firm or a set of partners will organize business processes, value chains, go-to-market strategies, channel and partner relationships to effectively deliver products and services. The distribution of product or service can be done in many ways involving many different parties. The relationships among the parties involved in the business processes and the nature of partnerships required to deliver the product or service must be clearly understood.
Revenue or Cost Sharing	In a viable revenue model, the pricing of offerings, the delivery of services, and the investments in infrastructure should allow revenues to exceed costs and produce attractive profits for growth and innovation. In other words, sustainability and growth require that the combination of the value proposition be attractive for all partners. Finally, the risk of errors in forecasted revenues and costs should be manageable, and the revenue/cost margin robust.

IV. Field Experiences

The intended contributions of our conceptual work are: i) modeling the IDM ecosystem; ii) deriving key strategic decision points through the use of the ADVISOR business modeling framework; iii) deriving through reflection and consensus, the notions of value create and capture as a result of the ADVISOR modeling. Our field experiences involved using the ADVISOR framework with a dozen de novo firms in the Singapore IDM marketplace. This confirmed that going through the business modeling process allowed stakeholders to reflect, communicate and agree as they articulated what the issue or challenge was, justified why it was critical and then acted on how they would address an issue or challenge pertaining to the firm's business model design. We have found that getting to this moment of truth is key to

understanding where to make money and how. The sooner founders of new firms arrive at such a point, the sooner effective business strategy could be (re-)designed.

The ADVISOR modeling framework showed itself to be versatile and easy-to-use; it required little coaching or muddling through abstract theory. It encouraged founders of small firms to undertake strategic thinking in an intuitive yet systematic manner. However, we note one major limitation – nowhere in the analysis does the firm's (namely, the founders') personalities, culture and leadership style factor into the business design. Even in the high technology industry, particularly with new firms, this aspect cannot be overstated. Founders create firms in their own moulds, playing on strengths and circumventing weaknesses. Business models and strategy design without incorporating style and culture may not effectively encapsulate all of a new firm's potential. Future work must incorporate this aspect of business design for an IDM firm. Notwithstanding the above limitation, we believe that in this article, we have briefly illustrated the usefulness of the ADVISOR framework in business modeling and design of de novo firms in the IDM marketplace.

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References

- [1] Brandenburger, A. M., & Nalebuff, B.J. (1995). The Right Game; Use Game Theory to Shape Strategy. *Harvard Business Reviews*, July-August, 57-71.
- [2] Brandenburger, A. M., & Stuart, H. W. (1996). Value-based Business Strategy. *Journal of Economics & Management Strategy*, 5(1), 5-24.
- [3] Iansiti, M. and Levien, R. (2004) Strategy as Ecology. *Harvard Business Review*, March, 1-10.
- [4] Osterwalder, A., Pigneur, Y., & Tucci, C.L. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of the Association for Information Systems*, Vol. 16 [Article 1].
- [5] Pavlou, P. A., and El Sawy, O. A. (2006) From IT Leveraging Competence to Competitive Advantage in Turbulent Environments: The Case of New Product Development. *Information Systems Research*, 17, 3, 198-227.
- [6] Teece, D. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning*, 43, 172-194.
- [7] Zott, C. & Amit, R. (2010) Business Model Design: An Activity System Perspective. *Long Range Planning* 43, 216-22