PRODUCT AND MARKET ROLL-OUT DECISIONS FOR NEW VENTURE SURVIVAL AND GROWTH

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ABSTRACT

This conceptual paper investigates the factors underlying the entrepreneur’s choice of the launch product and market combination and the subsequent product extensions and geographic roll-out, and thus concerns the dynamic growth strategy of new ventures. We develop a decision model for determining the optimal roll-out sequence for new products into existing and new markets. We propose that five main issues (risk reduction, net cash flow, resource development, profit, and intrinsic benefit) enter the decision model and that the weights of these in the model will change in stages as the new venture grows towards maturity.

INTRODUCTION

Growth of new ventures is of great interest to entrepreneurship researchers (see, e.g. Davidsson, Delmar & Wiklund, 2006). But there has been little discussion in the entrepreneurship literature regarding how new ventures grow. Do they expand their product lines in some systematic way? Do they enter new geographic markets, including foreign markets, in some reasoned (rather than opportunistic) way? Product extension and geographic roll-out decisions are important in all three main phases of the entrepreneurial process. In the nascent or pre-launch phase, the decision concerning the launch product and launch market is fundamentally involved in the opportunity recognition process. In the launch or emergence phase, the viability screening, risk recognition, and mitigation processes necessarily involve the selection of the launch product and market. In the growth phase, roll-out of new products into the same or new markets is potentially the major source of growth. Accordingly, the product-market roll-out decision is important in entrepreneurship education and research.

Several main issues have been largely neglected in the entrepreneurship literature on new venture growth. First, a major consideration is that small firms are not simply ‘little big firms’ (Welsh & White, 1981) and thus they may be concerned with and motivated by issues other than profits. New ventures face the ‘liability of newness’ (Stinchcombe, 1956), which causes them to face much higher mortality risk (Shepherd, Douglas, & Shanley, 2000) than established firms. Accordingly, survival is a critical issue for new ventures at first, and therefore the choice of the launch product and market must involve recognition of that decision’s impact on the risk of new venture failure. While the mortality risk of new ventures declines with time it is also clear that inappropriate selection of follow-on products and markets could potentially exacerbate the new venture’s mortality risk. Thus, the product and market roll-out sequence is an important determinant of both the initial and subsequent survival of the firm, and secondly of the growth of the new venture, and is therefore a central issue
in new venture strategy. Later, if the firm survives, it will be increasingly less concerned about survival and increasingly more concerned about growth and profits as it morphs towards becoming a mature firm.

Second, cash flows and cash balances are more important than profits in the early stages of new venture emergence. The new firm might show accounting profits but simultaneously show large accounts receivable, such that the firm has zero or negative cash balances. For the new venture ‘out-of-cash’ typically means ‘out-of-business’, whereas an established business is more likely to be able to arrange bridging loans or additional equity injections. Third, established firms will, to some large extent, have already developed their strategic resources and core competencies, and will be predominantly concerned with the prospective profitability of the next product or market to be rolled out, whereas the new venture must be concerned with building sustainable competitive advantage by securing valuable, rare and inimitable resources (Barney 1991) to ensure survival and growth in the longer term. Fourth, studies of the performance of new ventures focus almost exclusively on monetary or other objective measures, such as the growth of sales, profit and/or employment. But many entrepreneurs, and particularly lifestyle entrepreneurs, also seek intangible non-monetary rewards, wishing to obtain personal enjoyment as well monetary outcomes from being an entrepreneur.

In this paper we integrate these four issues into the dynamic growth decisions of the new venture, and thereby make several main contributions to the literature on new venture growth. First, we propose that the above-mentioned four elements, as well as profits, will enter the new venture’s decision function relating to the choice of the ‘next’ product/market combination to roll-out. Second, we propose that the weighting of these five elements will differ across individuals and entrepreneurial opportunities, but that there is likely to be a specific ranking in terms of their weights in the decision function when the entrepreneur considers the first (launch) product and market combination. Third, we propose that the weighting of these five elements will change as the new venture passes through the stages of the ‘firm life cycle’ on the path to becoming a mature firm. Fourth, and based on the new venture’s progression through the stages of the firm’s life cycle, we propose a ‘standard’ sequence of product and market roll-outs for the new venture as it transforms into a mature firm, and we note several important exceptions to this standard pattern.

**PRIOR LITERATURE**

Schumpeter (1934) said economic growth occurs due to the growth of innovative new firms. Penrose (1959) argued that the pursuit of growth was the appropriate mindset for the managers of the business firm. She spoke of the ‘entrepreneurial ambition’ of firms, which was manifested in management’s propensity for taking risks to ensure that growth occurs. Cyert & March (1963) argued that managers would take advantage of financial and organizational slack to pursue growth in new markets. In essence, economists argue that maximizing the growth of the firm is the logical outcome of the firm’s desire to maximize its profits in a multi-period model of the firm – as long as financial and organizational resources permit, the profit-maximizing firm will continue to invest resources in the current period to obtain growth in subsequent periods. Based on this, corporate finance theory suggests that the new venture’s product and market roll-outs should be chosen to maximize the firm’s profits over some time horizon (Beal & Goyen, 2005: p.7). Similarly, marketing theory also suggests that new products should be introduced and new markets should be entered by mature firms in the sequence that maximizes their profits – i.e. the most lucrative product-market combinations are implemented first, followed by progressively less lucrative marketing opportunities (e.g. Mahajan, Muller & Bass, 1990).

But corporate finance and mature-firm marketing theories are not readily applicable to the new venture situation. They relate to established and mature firms for the most part and effectively assume that the manager can readily form reliable projections of future revenues and costs. In most new venture situations, however, and particularly in the case of disruptive innovations (Bower & Christensen, 1995), the target customer will have considerable ignorance about the value proposition of the new product, and the entrepreneur will have considerable ignorance relating to the production and management processes (Shepherd et al, 2000). Even in the case of sustaining technological innovations (Bower & Christensen, 1995), the consumer and the entrepreneur will face greater levels of uncertainty than would customers and managers of established firms, due to the information that established firms will have derived from previous experience with similar products in similar markets. Accordingly, entrepreneurs typically do not calculate a net-present-value-maximizing sequence of new product and market extensions, but instead use simplified decision heuristics (more so than do managers of established firms) to make their strategic decisions (Busenitz & Barney, 1997; Busenitz, 1999). Moreover, established firms generally have accumulated wealth and resources that allow them to accept the risk consequences of new product introductions, such that the firm will probably survive even if the new product fails. Conversely, new ventures normally have limited resources and are likely to fail if the new product fails.
The new venture is highly vulnerable to mortality risk, which is largely explained in terms of the ignorance of customers, producers, and managers (Shepherd et al, 2000). The possession of financial back-up allows established firms to ‘place bigger bets’ in new product markets, whereas the limited financial resources of new ventures, and perhaps also their tendency toward ‘effectual reasoning’, may constrain them to a policy of making smaller bets due to their lesser level of ‘affordable loss’ (Sarasvarthy, 2001).

The ‘resource-based view’ (Penrose, 1956; Barney, 1991; Wernerfelt, 1984) has been assimilated into entrepreneurship research (e.g. Alvarez & Busenitz, 2001; Rangone, 1999; Westhead, Wright & Ucsbasaran, 2001) and teaching (Dollinger, 2003). Dollinger (2003) argues that nascent entrepreneurs should not launch a new venture unless they perceive a sufficiently high probability of the firm achieving sustainable competitive advantage. According to the resource based view (RBV), sustainable competitive advantage (SCA) is dependent on the ownership and/or control of resources that are valuable, rare, hard-to-copy and non-substitutable (VRHN). Resources are interpreted broadly to include tangible and intangible elements that allow the firm to exploit a market opportunity (Barney, 1991). Dollinger (2003) categorizes resources as Physical, Reputational, Organisational, Financial, Intellectual, and Technical.

The resources of new firms that are initially VRHN are less likely (than established firms) to be in the areas of reputation and organisation (Stinchcombe, 1965; Hannan & Freeman, 1984; Shepherd et al, 2000). These resources might well be developed to become ‘strategic’ resources (i.e. VRHN) if the firm survives and grows. More likely the new venture is launched on the basis of its ownership of valuable and rare physical, financial, intellectual and/or technical resources. Technical resources include intellectual property protection and agreements relating to licensing, supply, celebrity endorsements, joint ventures, strategic alliances, etc. Financial resources might only be gained if the new venture possesses valuable and rare Technical and/or Intellectual resources, and any or all of the initially valuable and rare resources may subsequently prove to be not hard to copy and/or be substitutable. If the new venture is able to develop reputation and/or organisation resources such that they become VRHN, or maintain the VRHN status of other resources, these will be the basis for their enduring SCA. If a new venture does not initially possess, or is unable to develop, VRHN resources, it is essentially constrained to a ‘copy-cat’ strategy and is then likely to fail, or to earn only marginally acceptable profits in a highly competitive market place, and in either case it would not subsequently grow significantly. Thus the possession of strategic resources is a necessary (but not sufficient) condition for the ongoing survival and the growth of the new venture. Accordingly the product and market roll-out sequence is important for the impact it has on the possession, maintenance and development of strategic resources.

The diffusion of new products into markets, and thus the growth of the firm’s sales, have received detailed attention in the marketing literature (Bass, 1969, 1980; Rogers, 1983; Mahajan, Muller, & Bass, 1990; Mahajan and Muller, 1998; Danaher, Hardie, & Putsis, 2001). The Product Life Cycle (PLC) concept is rooted in the diffusion and adoption of innovation literature (Bass, 1969, Robertson, 1971), and includes the five distinct stages of introduction, growth, early maturity, late maturity (or saturation), and decline with profits being higher or lower at different stages. The marketing literature also categorises purchasers into innovators, early adopters, early majority, late majority, and laggards (Peterson, 1973, Rogers, 1983, Mahajan, Muller, and Srivastava, 1990). The introduction stage of the PLC has slow sales growth and low profits due to the heavy expenses of product introduction. In this stage, relatively few innovators buy the product, but as information spreads early adopters are drawn in to create the growth stage, which is characterized by rapid market acceptance and substantial profit improvement. Subsequently, competitors enter the market causing greater awareness of the product and helping to serve the early majority customers. Next the product enters the maturity stage with a slowdown in sales growth and stabilizing or declining profit because of increased marketing activities to defend the product against competition. Late majority and laggard customers enter the market in the maturity stage. Eventually sales and profits erode during the final decline stage due to product obsolescence.

Firms must find new markets or launch new products in order to avoid decline (Agarwal and Gort, 2002). The diffusion curve literature includes the cumulative impact of new product and new market introductions on the growth of the firm’s total sales. As product extensions and geographic market extensions are introduced, the sales of these also follow a diffusion curve. The cumulative total of the sales of all previously introduced new products would increase exponentially if the rate and success of new product introductions continues unabated. But more likely, the profitability of the new product and new market opportunities available to the firm suffer diminishing returns due to the progressive exhaustion of the better opportunities for additional product and market extensions (on the same platform of technology). Thus total sales begin to grow at a declining rate and eventually would decline absolutely unless the firm is rejuvenated by implementing a disruptive new technology that starts the firm’s life cycle all over again. Accordingly, the multiproduct firm’s life cycle will represent the aggregation of the series of diffusion curves of previously launched products and innovations,
producing an aggregate ‘lazy S’ shaped curve, or a scalloped pattern if lags in new product development or market entry cause the rate of growth to decline before it accelerates again (Levitt, 1965; Mahajan & Muller, 1979; Sultan, Farley, & Lehmann, 1990). But despite the proliferation of studies on the PLC concept, the marketing literature does little to consider the decision function of the firm (particularly the new venture) when it comes to the reasons for selecting a new product to introduce next into the same or a new geographic area.

Since new markets might be foreign markets, the geographic expansion of entrepreneurial firms takes us to the international entrepreneurship literature (see, e.g. Oviatt & McDougall, 1994; McDougall & Oviatt, 2000; Corviello & Munro, 1995; Zahra, 2005). These writers note that domestic markets for new ventures are often limited, and thus international expansion is necessary if the firm is to survive and grow. But new venture internationalization is risky and time consuming for new ventures (Buckley, 1989; Zahra & George, 2002). Autio, Sapienza, & Almeida (2000) and Sapienza, Autio, George & Zahra (2006) argue that internationalization by a new venture influences both its survival and growth. Carr, Haggard & Zahra (2008) find that for young firms that survive foreign market entry, internationalization is significantly and positively related to sales growth, but that the probability of survival is increased by delaying internationalization. Mudambi & Zahra (2007) argue that internationalization can provide knowledge and other resource advantages that allow higher rates of survival as well as superior performance for the new venture. Lee, Kelley, Lee & Lee (2008) consider SME survival as a function of both the resources a firm owns and the resources it can access from international alliances, and find a significant positive relationship between sales internationalization and SME survival.

Johanson & Vahlne (1990) suggest that new ventures enter foreign markets gradually, driven by their accumulating resources and experiences with those markets. Knowledge derived from their accumulating experience can become a strategic resource for new ventures (Wiklund & Shepherd, 2003). Delios & Henisz (2003) envision the new venture as making the decision to internationalize through marginal and incremental engagement in international markets. Since new ventures will have greater managerial ignorance (Shepherd et al. 2000) in foreign markets, their foray into international markets proceeds incrementally in order to reduce the risk of new venture failure. McGrath (1999), McGrath & MacMillan (2000), O’Brien, Folta & Johnson (2004), and Holcomb, Upson & Webb (2008) argue that ‘real-options’ reasoning is particularly applicable to new venture internationalization, since the new venture can evaluate the market success, the information gained, and development of strategic resources that eventuate from each new market before deciding whether to increase investment in that market, defer any further expansion in that market (but retain the option), or abandon the option and withdraw from that market. This is consistent with and effectuation logic (Sarasvarthy, 2001).

The decision to internationalize will depend not only on the knowledge and other resources accumulated by the new venture, but also on the preferences of the entrepreneur and management team (Manolova, Brush, Edelman & Greene, 2002). For example, lesser tolerance for risk would be expected to militate against, while preference for intrinsic aspects of internationalization would militate in favor of, internationalization. McGrath, Ferrier, & Mendelow (2004) argue that ‘advantage-seeking’ new ventures can exploit established footholds in foreign markets to maintain and build sustainable competitive advantage. The strategic resources that are developed as a result of internationalization might include reputation, financial stability (due to the development of a portfolio of markets), greater knowledge of the foreign culture and business environment, and technical resources such as registered brand names, designs and other intellectual property protection.

THEORY DEVELOPMENT

Following the extant research outlined above, we now consider the issues that will underlie the new venture’s product and market roll-out decisions that will contribute to its growth. At variance with most of the entrepreneurship growth literature, but based on our earlier reasoning, we assume that the new entrepreneur (and later the firm) will have a multi-faceted objective function with three main objectives to accomplish. First, a primary objective of the new venture will be to survive, since without survival it cannot serve any of its other objectives. Second, the entrepreneur will want to prosper and grow, or grow and prosper. (Davidsson, Steffens & Fitzsimmons (in press) noted that firms might grow organically using their profits, or get loans or sell equity based on their prospective growth, and prosper later. For convenience of exposition in this paper, we will henceforth simply say ‘prosper (or profit) and grow’ to encompass either sequence of these events). The third objective we propose is that the entrepreneur and the top management team (and ultimately all the shareholders in the firm) will want to derive intrinsic benefits from their involvement in the firm and the entrepreneurial process. This is distinctly different from saying that the firm should introduce the most-profitable product first, since the potentially most-profitable product might involve an unacceptably high mortality risk for the new venture, and/or bring with it excessive intrinsic costs.
We focus our attention on the decision to grow by ‘rolling out’ new products and/or by ‘rolling into’ new geographic markets, rather than on the growth by diffusion of previously introduced new products. We shall assume that once introduced, each new product will diffuse through its market in the usual way, approximating a cumulative normal distribution, as discussed extensively in the marketing literature. For the purposes of modelling the roll-out process, we assume that the new venture will introduce a new product into an existing or new geographic market, or an existing product into a new geographic market, whenever it serves its objectives to do so and when it has sufficient financial and/or organizational slack – i.e. when sufficient resources are available. The new venture may have accumulated financial resources from prior capital raising, from retained profits in earlier periods (in the case of subsequent product and market roll-outs), or the firm may acquire investment funds from capital markets based on investors’ expected yield of such investments. For entrepreneurial new ventures, the limit of financial resource availability might be a self-imposed ‘affordable loss’ rather than the entire resource endowment of the entrepreneur (Sarasvathy, 2001). The firm’s organisational resources will include the capability to complete the cycle of market and technology research, prototype development, product refinement and market introduction required to introduce each new product.

Selection of the Launch Product

The entrepreneur’s proprietary new technology can usually be embodied in a number of new products, services, or business processes. For example, a new, more-efficient fan-blade design might be applied to create a new product in the markets for ceiling fans, hand dryers, hair dryers, vacuum cleaners, food processors, impeller pumps, wind tunnels, and so on. For expositional convenience we will use the term ‘new product’ henceforth to refer to the output of the manufacturing, service or business process. Thus, ‘new product’ might mean a new consumable or durable consumption item, a new service, or a new business process.

Which of these new products should be the launch product? Considering the survival objective first, and following Shepherd et al (2000), mortality risk derives from the ignorance of customers, producers and managers. Consumer ignorance will be lower if the product category already exists, such that the launch product is a ‘new to the market’ or creative imitation (Drucker, 1985) rather than a ‘new-to-the-world’ product, since potential customers in an existing product category will already possess information that allows them to evaluate and compare the new product with existing brands. Consumer ignorance will be lower if the customer’s awareness of need for the product is higher and/or this need has been felt for a longer period. Consumer ignorance will be lower if the new product leverages the brand name of an established and reputable supplier or joint venture firm, or carries a celebrity endorsement, since the potential customer will have greater trust in the well-known brand or celebrity. Producer ignorance might also cause new venture failure, and it will be lower to the extent that the entrepreneur and particularly production employees have had prior experience working with the same or similar technology in the same industry (Shepherd et al, 2000). It will also be lower to the extent that the new technology is a sustaining technological improvement rather than a disruptive innovation (Bower & Christensen, 1995). Similarly, management ignorance will be lower to the extent that managers have had prior experience (i) in the same industry, thus reducing technology risk; and (ii) in the same markets, thus reducing market risk (Douglas and Shepherd, 2002a). Launching the firm’s first product will serve to generate new knowledge about customer preferences, the suitability of alternate production methods, the effectiveness of marketing initiatives, the efficiency of business processes utilized, and so on. This new knowledge reduces the entrepreneur’s ignorance and consequently reduces the firm’s mortality risk. This suggests that the new venture’s launch product, other things being equal, should be selected according to the extent to which it capitalizes on knowledge already held by consumers, producers and managers, and according to the amount of ignorance reduction that is expected to be obtained from the marketing, production and management experience gained by launching that particular product.

A second main consideration for a new venture facing relatively high mortality risk is the need to generate net cash flow. A sufficiency of cash balances will insulate the new venture against market and/or technology setbacks, and will provide funds for intellectual property protection, market research, prototype development, and working capital, for example. Net cash flows will be maximised by reducing cash outflows, increasing cash inflows, or by some combination of the two. Different product applications of the technology will cost more or less to produce, command higher or lower prices in the market, generate higher or lower sales volumes, require greater or lesser after-sale maintenance or warranty expenses, and so on. This suggests that the launch product decision should give consideration to the contribution that the launch product makes to the volume and timing of net cash flows and the accumulation of cash balances, other things being equal.

A third major consideration is the building or maintenance of strategic resources. These are a necessary but not sufficient condition for new venture survival, since absence of competency in, for instance, financial or
marketing management, may cause the firm’s demise despite possession of VRHN resources in other areas. Management competencies reside in both the Intellectual and Organisation resource groups, and the latter also includes processes by which managers and employees reduce cost per unit and increase the quality of the product. Therefore, the development of Intellectual and Organisation resources should be an important priority for the new venture. Similarly, some products that might be considered for the launch product role will have greater potential than others for building customer awareness, brand name recognition, and firm reputation. For example, a launch product that is an effectively invisible component inside a downstream manufacturer’s product will have lesser impact on building the firm’s reputation than would a consumer product that would be adopted widely and generate widespread brand recognition for its quality. Further, some products might better protect the new venture’s intellectual property than others. For example, trade secrets might be more easily reverse-engineered from some products (where they are easily isolated) than from others (where they are inextricably compounded with other technologies). This suggests that the choice of the launch product should also give consideration to the contribution the launch product will make to the maintenance and/or development of strategic resources, more generally, but in particular, to the contribution it makes to the development of vital Intellectual, Organisation, and Reputation resources, other things being equal.

A fourth consideration is the profitability of the product. Since profits will be necessary for survival and growth (after the initial period when the new venture is surviving while ‘burning’ its initial capital) a launch product that promises greater profitability than others will be preferred, other things being equal. Greater profitability, and/or greater promise of future profitability, will militate in favor of better access to external capital to fund growth, and/or greater willingness to fund growth using retained earnings, since replenishment of retained earnings will seem to be little or no problem. An issue related to profitability is the length of the launch product’s life cycle – a product that promises a longer period of customer demand before saturating the market or becoming obsolete would generally have a higher net present value of profits, other things being equal. This suggests that in the launch product decision process consideration should be given to capacity of the launch product to generate incremental profitability, as well as the contribution to risk reduction, cash balances, and development of strategic resources, other things being equal.

A fifth consideration that should be expected to enter the choice of the launch product would be the non-monetary or intrinsic benefits that the entrepreneur might expect each of the potential launch products to deliver if it was in fact to be introduced. The introduction of some products might be expected to be more satisfying and more-interest-provoking than others, and conversely some products might be profitable enough but much less satisfying in terms of their intrinsic benefits. Douglas & Shepherd (2000) included the psychic benefits of autonomous decision making, the psychic costs of risk bearing and work effort, and the net psychic benefits from all other non-monetary benefits and costs, in the individual’s choice of entrepreneurial career over an employment career. We note that the choice of one new product/market combination over another is analogous to the individual’s choice to select one new venture opportunity over another, since any new venture must involve at least one specific launch product to be launched into at least one specific geographical area. Thus we follow Douglas & Shepherd (2000) to argue that non-monetary (or psychic or intrinsic) net benefits are an important aspect of the product and market roll-out decision.

Thus we have identified five elements that should enter the entrepreneur’s decision function, three of which relate directly to the three objectives identified (viz: survival, profits, and intrinsic benefits) while the other two (viz: cash flow generation and development of strategic resources) support survival and longer term profitability. To grow and continue to grow the firm must first survive, maintain positive cash balances, secure strategic resources, and earn sufficient profits to fund the desired growth.

The Weights in the Decision Function

The relative importance of these five items in the entrepreneur’s new product decision function will depend on the entrepreneur’s preferences and aversions to the various items in the decision function. Considering first the risk associated with the launch product, the entrepreneur might be more or less risk averse, or put another way, more or less preferring of survival. If the entrepreneur’s aversion to risk is relatively high, then the weight placed on survival will be relatively high, as compared to the weights for the other elements in the decision function. In this case the new venture might appear to adopt survival as its primary objective, such that the objectives to prosper and grow and enjoy the experience become secondary at this juncture. This militates in favor of an initially greater weighting for risk reduction than for the other four factors in the decision function, since the firm must first survive before it can prosper.

We propose that the next most urgent issue for the new venture launching its first product would normally be the capacity of the launch product to generate net cash flow. Positive cash balances are necessary for survival
– by law, the firm must close down if it becomes technically illiquid. Cash flow is necessary to meet payroll, to provide working capital, to pay for marketing and selling expenses, to fund further market research, product development, intellectual property protection, and so on. Of course, cash is also available from internal and external debt and equity. At the beginning, although the entrepreneur may have amassed a sufficient amount of cash reserves to fund the introduction of the launch product, cash will be a relatively scarce resource. Thus we expect the capacity of the launch product to generate free cash flow to be (normally) the second most heavily-weighted element in the decision to choose the launch product.

Next, we expect the weighting of ‘incremental profit generation’ to normally have a relatively light weight in the decision to select the launch product. The entrepreneur will typically consider it more important to ensure survival, rapid generation of free cash flow, and locking in strategic resources than it is to make quick profits that might be short-lived. Given the new venture’s objective function, and in particular its longer term priority to prosper and grow, the time horizon of the growth-oriented new venture is presumed to be relatively long. Accordingly the new venture faces a trade-off between current period profits versus a stream of future profits over many periods, and the net present value of the latter is likely to be higher if the new venture initially places a higher priority on building productive capacity and strategic resources rather than on taking an early profit. Thus we expect that the capacity of the launch product to generate incremental profits in the early stages will normally be subordinate to the capacity of the launch product to develop strategic resources in order to sustain business in the long run, other things being equal.

Finally, regarding the intrinsic benefits of the entrepreneurial process, we propose that typically the entrepreneur will be willing to delay gratification and suppress the desire to augment intrinsic benefits at the expense of the other main objectives. This is not to say that there will be little enjoyment of intrinsic benefits early in the entrepreneurial process – indeed involvement in the launch process might give the entrepreneur great satisfaction. But later, when survival is assured, when free cash flow is adequate to fund capacity expansion and marketing expenditures, and when strategic resources have been developed and locked in, we might expect the entrepreneur and the top management team to be more willing to allocate resources to the generation of intrinsic benefits, such as perquisites, corporate social responsibility, and so on.

Product Roll-out and Geographic Roll-out
If the new firm survives the launch of its initial product it will face incentives to develop a wider and deeper product line in the same product category, and/or to apply its technology to other product categories. These incentives will be directly and indirectly related to survival and profitability. A wider and deeper product line will reduce the firm’s vulnerability to demand fluctuations for any one product or group of products; enhance awareness of the firm; potentially build the firm’s reputation and increase profits and growth prospects, and may increase net intrinsic benefits. So which products should follow the launch product, and in what order? We propose that the same five considerations for the launch product must also apply to the selection of the second product, then the third product, and so on, but we shall argue that the weightings of these five considerations will change as the firm continues to expand its product line.

Concerning geographic expansion, the new venture will typically launch its new venture into a single geographic area initially, due to early resource limitations which manifest themselves in an inability to produce adequate volumes of the launch product for more widespread distribution, and/or an inability to overcome a variety of logistical and managerial obstacles in other potential markets. Exceptions to this might be found in Internet-based new ventures that solicit demand from and make sales to customers located anywhere in the world, but even for these firms logistical and legal considerations (such as trademark infringement) are likely to
The Entrepreneur's Decision Function for Product and Market Roll-out

Incorporating the above considerations we have developed a decision model for the growth-oriented entrepreneur whose objective function is to survive, prosper and grow, and enjoy the entrepreneurial process. This entrepreneur will seek to maximize these multiple objectives by introducing new products to the same or new markets in rank order of their value in serving the firm’s objective function. Subject to resource constraints, the new venture will introduce one or more new products into the same or different markets each period until its resource constraints are binding, and will continue to do this in subsequent periods until it reaches the point where no further growth prospects are attractive. Thus the firm should choose the first (and then the next, and then the next, and so on) new product/market combination to:

\[
\text{Max. } V_{ij} = b_1 RISK_{ij} + b_2 NCFG_{ij} + b_3 RDEV_{ij} + b_4 PROF_{ij} + b_5 \text{ INTR}_{ij} \quad (1)
\]

Subject to the financial and organizational resource constraints it faces each period, and where:

- \( V_{ij} \) is the value of new product alternative \( i \) to the new venture foreseen at time \( t \);
- \( i = 1, 2, 3, \ldots, n \) are the alternative new product alternatives;
- \( j = 1, 2, 3, \ldots, m \) are the potential geographic markets;
- \( b_1 \) is weight assigned to risk reduction (RISK) at time \( t \);
- \( RISK_{ij} \) is the risk reduction expected from new product \( i \) in market \( j \) foreseen at time \( t \);
- \( b_2 \) is the weight assigned to Net Cash Flow generation (NCFG) at time \( t \);
- \( NCFG_{ij} \) is the net cash flow generation expected from new product \( i \) in market \( j \) foreseen at time \( t \);
- \( b_3 \) is the weight assigned to resource development (RDEV) at time \( t \);
- \( RDEV_{ij} \) is the resource development expected from new product \( i \) in market \( j \) foreseen at time \( t \);
- \( b_4 \) is the weight assigned to capturing intrinsic benefits (INTR) at time \( t \), and
- \( INTR_{ij} \) is the net intrinsic benefits associated with new product \( i \) in market \( j \), foreseen at time \( t \).

Note that the variables \( RISK_{ij}, NCFG_{ij}, RDEV_{ij}, PROF_{ij} \) and \( INTR_{ij} \) in the decision function may take negative or positive values according to the specific new product alternative under consideration. From the functional form of Eq. (1) we can see that the entrepreneur may make trade-offs among the five decision criteria, choosing the next product/market combination that best serves the firm’s objectives in total. For example, the launch product may not be the one that contributes most to risk reduction, but in combination with the other variables contributes most to value creation (\( V_{ij} \)) for the entrepreneur. Note also that the weight applied to each variable, and the capability of the new product to reduce or increase risk, to generate cash, to develop resources, to create profits, and to create intrinsic benefits, might vary over time, as we discuss later.

Let us clarify what we mean by the value (\( V_{ij} \)) of the new product opportunity. Since the decision function contains five unlike and therefore non-additive independent variables, these must be converted into a common medium to represent \( V_{ij} \). Expectancy theory (Vroom, 1964) suggests that individuals will choose among alternatives based on the expectation that the act will be followed by a particular outcome (expectancy) and the desirability of that outcome (valence). The desirability of an outcome depends on the degree of preference for that outcome. That is, the value of an alternative to the individual is a multiplicative relationship
between the expectancy and the valence of each alternative action. In our model there are five expectancies (namely RISK\textsubscript{ij}, NCFG\textsubscript{ij}, RDEV\textsubscript{ij}, PROF\textsubscript{ij} and INTR\textsubscript{ij}) and five associated valences (namely the coefficients b\textsubscript{1i}, b\textsubscript{2i}, b\textsubscript{3i}, b\textsubscript{4i}, and b\textsubscript{5i} which represent the entrepreneur’s or attitudes towards each of the arguments in the decision function), and V\textsubscript{ij} is the sum of the five products of the expectancies and valences. Eisenhauer (1995) and Douglas & Shepherd (2000) have previously used the concept of psychic utility to represent the value of a new venture opportunity to the individual, and Douglas & Shepherd (2002b) later found empirical evidence supporting the multiplicative relationship between the entrepreneur’s attitudes toward outcomes (including risk, income (profits) and net perquisites) associated with self-employment alternatives in the context of entrepreneurial intentions. Wiklund, Davidsson & Delmar (2003) previously used an expectancy-valence model in the context of small business growth. Arnold (1981) found evidence to support the multiplicative relationship between expectancy and valence in the context of work motivation, and Steel & Konig (2006) have demonstrated that expectancy-valence models and individual’s utility functions are effectively identical.

Thus the model presented here is an expectancy-valence (or utility) model of human behaviour that purports to explain the choice of the next new/product combination to be implemented by the firm in terms of the expected utility of the alternatives considering five disparate arguments in the decision function. To put this in the context of the individual-opportunity nexus argued by Shane and Venkataraman (2000) and Shane (2003), the decision to introduce a new product into the same or a different market (as presented by the model) is the result of an interaction between the characteristics of the opportunity (the variables RISK\textsubscript{ij}, NCFG\textsubscript{ij}, RDEV\textsubscript{ij}, PROF\textsubscript{ij} and INTR\textsubscript{ij}) and the characteristics of the individual (the preference coefficients b\textsubscript{1i}, b\textsubscript{2i}, b\textsubscript{3i}, b\textsubscript{4i}, and b\textsubscript{5i}). We note that the level of analysis necessarily shifts from the individual to the group level as the new venture launches its first and subsequent products and proceeds towards maturity. Thus, the preferences that enter the decision function must be expected to morph from the individual’s preferences at first to a set of preferences that effectively represents a consensus of the firm’s top management team and ultimately that of the shareholders of the firm.

### Changing Weights in the Decision Function as the Firm Matures

We mentioned earlier that for mature firms the new product decision will primarily focus on incremental profitability (Mahajan, Muller, and Bass 1990; Golder and Tellis 2004). We believe this will happen because the mature firm will have reduced its mortality risk to levels which are normal for mature firms in that industry and market; and that it will have accumulated adequate cash balances to fund its capacity expansion and marketing expenses, and that it will have developed and locked in its strategic resources to the extent possible. This suggests that the weights for risk reduction, cash flow generation and resource development will decline over time, while the weight for incremental profitability will increase over time.

Considering risk first, as the number of products and markets increases, the firm is effectively developing a portfolio of product/market combinations and can afford to be increasingly blasé about the riskiness of the next product/market combination to be introduced. That is, its attitude will shift from risk aversion towards risk neutrality, and thus the importance of choosing risk-reducing products will be reduced toward a zero weighting as the number of products progressively increases. Similarly the importance associated with the next product’s contribution to net cash flows will reduce toward zero as the firm matures towards becoming a successful ‘established’ firm, as it will likely have adequate cash reserves on hand resulting from its increasing range of other products. But since larger cash balances are desirable as an insurance against unexpected reversals in the markets for its products and as a contingency fund to take advantage of new opportunities that might reveal themselves as time passes, we expect that the weighting of the contribution to cash balances will decline more slowly than the weighting risk reduction in the selection of the next product to introduce.

The importance of the next product’s contribution towards building strategic resources is also likely to diminish over time, because the successful firm will have developed brand name recognition, built reputation, increased organizational efficiency, and locked in other strategic resources. But the importance of building and maintenance of strategic resources should not be expected to decline as quickly as the weights for risk reduction and cash balances. Rather, we expect the importance of the next product’s contribution to the maintenance of strategic resources to be second in importance to profitability as the firm approaches maturity.

Finally we consider the weight attached to the intrinsic benefits. The process of selecting new products and markets is likely to have resulted in the selection of new product/market combinations in generally declining order of their intrinsic benefits, such that the importance of this factor as a criterion for the next new product/market combination will tend to decline over time. Moreover, and particularly if the firm becomes a public company and is held more accountable by external shareholders, we should expect the expenditures on perquisites that generate intrinsic benefits to have peaked as a proportion of total budget and be declining in
relative terms at least as the firm matures. We argue that intrinsic benefit is likely to remain important throughout the different stages even though its weight in the decision function may not be of highest importance. However, we note several cases where well-established firms have launched new products or entered new market mostly to derive intrinsic benefit, such as issuing ‘anniversary’ limited editions, introducing products or services for charitable purposes, and undertaking corporate social responsibility initiatives. Whether the top management team will choose new product-market combinations that augment intrinsic benefits at the expense of profitability will depend on the monitoring of managers by the owners of the firm, and we note from the principal-agent literature that if the managers are also significant shareholders their incentives will be aligned with those of shareholders, such that they are expected to pursue profitability without regard to personal gratification via discretionary expenditures to augment intrinsic benefits (Jensen & Meckling, 1976).

This reasoning suggests that the ranking of the decision criteria weights will reverse as the firm matures to become an established firm with the concomitant reduction of mortality risk and accumulation of strategic resources. As the weights that were initially relatively high subsequently fall they will approach zero, such that we should expect the firm to gravitate towards choosing the next new product primarily on the basis of its contribution to the net present value (i.e. profitability) of the firm by the time it attains industry-best practice mortality-risk status (Shepherd, et al, 2000).

The Firm’s Life Cycle and the New Product Decision

We now argue that the Firm’s Life Cycle (FLC) plays an important role in influencing the weights for the five items in the decision function. In the introductory stage of the FLC, firms are most concerned about their survival, and thus put highest weight on reduction of risk and lesser weight on net cash flow generation, resource development, profitability, and intrinsic benefit as argued earlier. In this stage, we propose that new ventures will normally seek to avoid and/or mitigate the relatively high mortality risk associated with the ignorance of customers, producers and managers, and might therefore choose to introduce a ‘creative imitation’ (Drucker, 1985) into an existing product category, most commonly in the home market.

In the growth stage of the FLC, the firm is likely to be eager to meet the exponentially increasing demand for the product and will seek to build additional productive capacity and to invest in expanded marketing efforts (Golder and Tellis 2004). Concurrently, the firm’s concern with risk reduction will be allayed by the robust demand for their product. Accordingly, we propose that in the growth stage the primary focus of the firm will shift from risk reduction to the accumulation of cash balances, in order that they can afford the expansion of productive capacity and marketing efforts, and investments in R&D for future product and market extensions. Moreover, enhanced net cash flow generation will allow the new venture to build sufficient cash balances to insure against unexpected downturns in product demand and/or the deleterious effects of competition arising from the probable incursion of new rivals into the market.

In the maturity stage of the FLC, competitors are likely to have entered the market causing keen price and product competition. The firm’s invulnerability to competition will depend on its possession of strategic resources. If the firm has developed and can maintain strategic resources it will be able to offer a differentiated product that is immune to competition to a greater or lesser degree. Accordingly, in the early maturity stage we expect the firm to shift its primary focus to the development of strategic resources, since this will serve to isolate them from the deleterious effects of price competition. In this FLC stage, market demand is still increasing (albeit at a decreasing rate), the firm will have moved down its learning curve to secure reduced cost levels, its net cash flow position and profitability rates should be strong, and it is likely to put highest weight on the development of strategic resources in order to lock in their competitive advantage and thereby ensure future profitability. In the late maturity stage of the FLC, the declining rate of increase of market demand, and the potential influx of rival firms who have been able to ‘invent around’ the firm’s technology and/or build equivalent reputational, organizational and intellectual resources, is likely to mean that the firm’s profit rate will decline. Given that managers and shareholders will have become accustomed to higher profit rates, declining profit rates will be viewed as a crisis, bringing consideration of the incremental profitability (of new products and new market entries) to the fore. The established firm may come to believe that incremental profitability may be generated from loyal customers who are willing to pay premium prices, and/or from cost savings obtained by improved efficiencies in serving existing markets. But if the firm keeps introducing product and market extensions based on the same technology, ultimately it will enter the decline stage of the FLC because the incremental value of these product and market extensions will approach zero and become negative. Klepper (1996) predicts that, over time, prices for existing products will fall as the market becomes saturated and/or as new entrants better satisfy customers with their more-innovative new products. It is thus critical in the late maturity stage that the firm introduce a radical innovation based on a new technology that will support a new
series of related product extensions and market extensions and thereby rejuvenate the firm and restart its life cycle. If this radical innovation is delayed the firm may have entered the decline stage of the FLC before the sales increases of the new products ‘kick in’ to cause the firm’s aggregate sales to expand again, and thus the firm’s growth curve will exhibit a ‘scallopl’ rather than a smooth S-curve (Levitt, 1965).

Once the new venture has completed the five stages of the FLC it is no longer a new and small firm, of course. Thus we do not expect it to revert to the decision weights appropriate to a new venture. Rather, it now acts like an established and mature firm in the manner predicted by corporate finance and marketing – that is, the next new product will be chosen primarily on the basis of the incremental profitability it promises.

**DISCUSSION**

We have proposed that entrepreneurs whose new venture objective is multi-faceted to include survival, profit and growth, and intrinsic benefits as joint objectives should consider five arguments in their decision function when they select the roll-out sequence of new products and new markets. These arguments are the risk reducing impact, the net cash flow generating capacity, the resource development impact, the profit augmentation ability, and the intrinsic benefit generating capacity of the various new product-market combinations. We propose that the entrepreneur/management team/shareholders of the new venture select the new product-market combination that maximizes the value derived from the five items in the decision function. We propose that the weights attached to each of the five items in the decision function are likely to adopt a priority ordering initially, with risk reduction being most important, followed by net cash flow generation, strategic resource development, incremental profitability, and intrinsic benefits in that order. We proposed that the weights attached to these arguments are likely to vary according to the different stages of the firm’s life cycle, and are likely to effectively collapse to a single argument (profitability) when the firm attains maturity.

This suggests a four-stage sequence of strategic new product and new market introductions for the typical new venture. In the introductory stage of the FLC the entrepreneur might launch a creative imitation within an existing product category into the local market. This is relatively low-risk, since consumer, producer and management ignorance are likely to be lowest for this combination. In the growth stage, firms will be interested in the cash flow generating capacity of new products, and focus on launching product line extensions into their existing market. As the firms enter the early maturity stage, focus will shift to strategic resource development to counter the price competition from increasingly numerous rivals, and firms will consider rolling their developed products into more distant markets, primarily to develop strategic resources but with side benefits for risk reduction, free cash flow and profitability. In the late maturity stage, firms will foresee declining profits and sales and we expect they will put highest weight on profit augmentation. To avoid the decline stage they should be expected to introduce a series of new products based on a new technology and thus start the PLC over again.

**Significant Exceptions to the General Rule**

Of course this simplistic four-stage sequence of product and market roll-outs immediately begs many questions. First, what about new firms that begin by launching a disruptive new product that relies on a radical innovation? This case can be explained in terms of the model by one or a combination of two things. First, consider the preference structure of the entrepreneur – if the entrepreneur is less concerned with mortality risk, and/or sees less need to accumulate free cash flow for capacity expansion, and/or sees less need to develop strategic resources (perhaps having patented technology), and/or is more attracted by the potential profitability of the radical innovation, and/or expects to derive substantial intrinsic benefits by being the pioneer in the new market, then the value of this new product as the launch product may be superior. In terms of Eq. (1), the weights $b_1$, $b_2$, and $b_3$ might be relatively small compared with $b_4$ and $b_5$, such that the disruptive product is seen as the most desirable launch product. Second, since the value of the launch product ($V^{ij}_t$) is the sum of the products of those coefficients reflecting preferences and the values of the related arguments in the decision function, it might be that the magnitude of the risk reduction ($RISK^{ij}_t$), net cash flow generation ($NCFG^{ij}_t$), and the resource development ($RDEV^{ij}_t$) associated with the disruptive new product are quite small relative to the magnitude of the incremental profit ($PROF^{ij}_t$) and/or the intrinsic benefits ($INTR^{ij}_t$) foreseen for that product, such that $V^{ij}_t$ is maximized by choosing the disruptive innovation over the any creative imitations that might have been available to the entrepreneur. Thus the case of the disruptive launch product is not in contradiction to the formal model, but is simply more complex than the typical case.

Second, what about new firms that are ‘born global’ and launch into a foreign market immediately? One explanation is that for some nascent entrepreneurs (such as immigrants), their knowledge may be far better about their original home market, and this lack of management ignorance may mitigate in favour of internationalising...
their new venture by selling to their original home market. Thus, the magnitude of $\text{RISK}_{ij}$ might be relatively low for that foreign market for them. Alternatively, or in addition, the demand for the product might be better suited for the culture and tastes of consumers in a foreign market, such that $\text{NCFG}_{ij}$, $\text{RDEV}_{ij}$, $\text{PROF}_{ij}$, and $\text{INTR}_{ij}$ might take much larger values in the foreign market than they would in the domestic market. Also, the values of the $b$ coefficients are likely to vary across countries. Again we treat this as an exception to the typical sequence but argue that it can be explained by the more complex model represented by (Eq. 1).

Third, what about social entrepreneurship, and not-for-profit firms, and other firms where societal benefits are considered to be much more important than profit? In terms of the model, this would mean that both $b_2$ and $\text{PROF}_{ij}$ are relatively small and have little impact on the value calculation, whereas $b_5$ and $\text{INTR}_{ij}$ might be relatively large. Fourth, corporate social responsibility (CSR) is increasingly expected of firms operating in the private sector – can this be explained in the model? Corporate managers with CSR would be expected to have stronger preference for CSR, manifested as a greater value for $b_5$ and thus they would be expected to pursue new product opportunities that promise higher intrinsic rewards for the practice of CSR.

Our proposals for different weights assigned to the five factors in the different stages of the FLC are therefore meant to be simple guidelines for new venture planning for product or market extension, and should be modified by information relating to the preferences of the entrepreneur and/or top management team, and/or the valency of the independent variables for particular product/market alternatives. We note that the weights in the decision function may be expected to change significantly over time, due to significant reduction of risk, accumulation of cash balances, resource development, or profitability in the previous periods. Similarly, the values of the independent variables in the decision function may change over time due to changes in resource prices, market demand, competitor actions, and other factors. Thus a particular product/market combination might become more or less attractive over time due to either or both the external factors operating on the independent variables and the changing preferences of the entrepreneur/top management team.

Another issue that calls for further discussion is our adoption of a multi-faceted objective function for the entrepreneurial firm that jointly considers survival, profit and growth, and intrinsic benefits of the process, whereas in the great majority of the previous literature on the growth of the firm, profits and/or growth are assumed to be the sole objective of the entrepreneurial firm. Consideration of profits and growth alone totally disregards the intrinsic enjoyment that entrepreneurs are reported to derive from ‘being their own boss’ (Barringer & Ireland, 2006, p.6) and having passion for their vocation (see, for example, Cardon et al, 2005). In explaining the differential growth performance of entrepreneurial firms it is surely important to consider the entrepreneur’s preference (or not) for growth, and to incorporate in the decision function the additional elements that seem likely to enter the individual’s decision to grow by sequential roll-outs of new product and markets. Indeed it seems that the literature on the growth of entrepreneurial largely ignores what motivates people to become entrepreneurs in the first place. The motivation of individuals to undertake entrepreneurship (i.e. entrepreneurial intention) is related to their perceived feasibility and their perceived desirability of that action (Krueger, 1993; Krueger & Brazeal, 1994). The perceived desirability of entrepreneurship will depend on the attitudes one has to the inherent benefits and costs of entrepreneurship, which include independence, profits, bearing risk, working hard, and other intrinsic net benefits (Douglas & Shepherd, 2000). Accordingly it makes sense that measures of entrepreneurial growth should explicitly consider the composite psychic benefits derived from all aspects of the entrepreneurial process, such that the entrepreneurial growth literature aligns with the entrepreneurial intentions literature.

CONTRIBUTIONS AND IMPLICATIONS

This paper makes several main contributions to the literature. First, it is the first in the entrepreneurship literature, to our knowledge, to argue that the product and market roll-out sequences is an important part of the entrepreneurial process and to consider the entrepreneur’s decision as to the launch product and initial market, and the subsequent product and geographic roll-out sequences, in the context of the new venture’s dynamic strategy for growth. Second, we propose five main arguments for the decision function that might be used in the selection of the next new product-market combination to exploit. While three of these (income or profits, risk, and net perquisites) were essentially proposed in a related context by Douglas & Shepherd (2000) this paper also proposes that net cash flow generation and the development of strategic resources should be considered explicitly in the strategic growth decision. Thus, this paper departs from the usual assumption that the objective function of the high-growth new venture is simply to maximize growth and considers other elements in the entrepreneur’s objective function. Third, we propose a model whereby the new venture seeking to serve a multi-
faceted objective function covering survival, profitability, growth and entrepreneurial enjoyment, will continuously utilize prior profits and/or new capital injections to invest in new product-market opportunities as long as attractive opportunities continue to exist. This model aligns with the individual-opportunity nexus concept (Shane and Venkataraman, 2000) by drawing attention to the interaction between the preferences of the entrepreneur and the characteristics of the succession of new product/market combinations that are the vehicles by which the firm will grow. Fourth, this paper argues that the weights attached to the five arguments in the decision function for new ventures will have a particular priority at first, with progressively smaller weights typically being attached to survival, cash-flow generation, building strategic resources, profitability and intrinsic benefits, in that order. We then argue that as the new venture grows to become a mature firm, its decision-making weights will change, until as an established firm it will focus almost entirely on profitability, and thus we reconcile the disparity in the new product decision making process that is observed between new ventures and established ventures. Fifth, we suggest a ‘standard’ launch and roll-out sequence of essentially similar products in the introductory stage, product extensions in the growth stage, geographic extensions in the maturity stage, and disruptive innovations in the decline stage of the firm’s life cycle in order to rejuvenate the firm. We note, however that particular exceptions to this ‘standard sequence’ such as entry with a disruptive product, born global new ventures, social entrepreneurship and corporate social responsibility are at variance with this standard sequence but can be explained by the model. Finally, because we have investigated the new product decision in the context of new business ventures, we believe that we have also made minor contributions to the wider literatures of economics, marketing, strategy and international business.

Implications for Practitioners, Educators, and Researchers

Based on our analysis, nascent entrepreneurs could be provided with guidelines and a checklist of factors to consider when contemplating the selection of their launch product and launch market and the subsequent roll-out of new products and new geographical markets combinations. A questionnaire for nascent entrepreneurs might be generated to allow entrepreneurs to judge the relative values of the various new product/market alternatives they face both at the launch point and for subsequent product/market roll-outs. This should serve to increase the survival rate of new ventures and increase the profitability and growth rates of the survivors. Entrepreneurship educators might introduce this material to their students, emphasising that the product-market roll-out decision is an important component of the pre-launch phase, the emergence phase, and the growth phase of the entrepreneurial process. The roll-out decision is fundamental to the growth process and this decision process should be recognised as an important topic in entrepreneurial education.

Entrepreneurship researchers could further analyse the mechanics of the growth process, integrating the diffusion-curve impacts on growth with the impacts on growth due to new product-market combinations. Empirical testing might confirm whether or not successful entrepreneurs act ‘as if’ they are following the decision model presented here. Are the propositions about the relative magnitude of the weights and the changing magnitude of these weights as the firm matures borne out by empirical evidence? Do individual elements in the new-product decision function each become foremost in a particular stage of the firm’s life cycle, as proposed in this paper? Do most new ventures (that survive) tend to follow the sequence of (i) old product-old market, (ii) new product-old market, (iii) old product-new market, and (iv) new product-new market, as proposed as a ‘standard sequence’ of product-market rollouts? Finally, the complex issues associated with changing the level of analysis from the individual to the firm level need to be addressed in greater detail. There is much scope for further research on these important issues.

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