

# Theories and approaches to innovation strategy



The long-standing debate between 'rational' and 'incremental' strategies is of central importance to the mobilization of technology and to the purposes of corporate strategy. We begin by reviewing the main terms of the debate, and conclude that the supposedly clear distinction between strategies based on 'choice' or on 'implementation breaks down when firms are making decisions in complex and fast-changing competitive environments. Under such circumstances, formal strategies must be seen as part of a wider process of continuous learning from experience and from others to cope with complexity and change. Notions of corporate strategy first emerged in the 1960s. A lively debate has continued since then amongst the various 'schools' or theories. Here we discuss the two most influential: the 'rationalist' and the 'incrementalist'. The main protagonists are Ansoff<sup>1</sup> of the rationalist school and Mintzberg<sup>2</sup> amongst the incrementalists. An excellent summary of the terms of the debate can be found in Whittington,<sup>3</sup> and a face-to-face debate between the two in the Strategic Management Journal in 1991. Rationalist Strategy 'Rationalist' strategy has been heavily influenced by military experience, where strategy (in principle) consists of the following steps: (1) describe, understand and analyse the environment; (2) determine a course of action in the light of the analysis; (3) carry out the decided course of action.

This is a 'linear model' of rational action: appraise, determine and act. The corporate equivalent is SWOT: the analysis of corporate strengths and weaknesses in the light of external opportunities and threats. This approach is intended to help the firm to: - Be conscious of trends in the competitive environment. - Prepare for a changing future. - Ensure that sufficient

attention is focused on the longer term, given the pressures to concentrate on the day-to-day. - Ensure coherence in objectives and actions in large,

functionally specialized and geographically dispersed organizations.

However, as John Kay has pointed out, the military metaphor can be

misleading. 4 Corporate objectives are different from military ones: namely,

to establish a distinctive competence enabling them to satisfy customers

better than the competition - and not to mobilize sufficient resources to

destroy the enemy. Excessive concentration on the ' enemy' (i. e. corporate

competitors) can result in strategies emphasizing large commitments of

resources for the establishment of monopoly power, at the expense of

profitable niche markets and of a commitment to satisfying customer needs.

More important, as Box 3. 1 shows, professional experts, including

managers, have difficulties in appraising accurately their real situation,

essentially for two reasons. First, their external environment is both complex,

involving competitors, customers, regulators and so on, and fast-changing,

including technical, economic, social and political change. It is therefore

difficult enough to understand the essential features of the present, let alone

to predict the future. Second, managers in large firms disagree on their

firms' strengths and weaknesses in part because their knowledge of what

goes on inside the firm is imperfect. As a consequence, internal corporate

strengths and weaknesses are often difficult to identify before the benefit of

practical experience, especially in new and fast-changing technological

fields. For example: - In the 1960s, the oil company Gulf defined its

distinctive competencies as producing energy, and so decided to purchase a

nuclear energy firm. The venture was unsuccessful, in part because the

strengths of an oil company in finding, extracting, refining and distributing

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oil-based products, i. e. geology and chemical processing technologies, logistics, consumer marketing, were largely irrelevant to the design, construction and sale of nuclear reactors, where the key skills are in electromechanical technologies and in selling to relatively few, but often politicized electrical utilities. 6 - In the 1960s and 1970s, many firms in the electrical industry bet heavily on the future of nuclear technology as a revolutionary breakthrough that would provide virtually costless energy. Nuclear energy failed to fulfil its promise, and firms only recognized later that the main revolutionary opportunities and threats for them came from the virtually costless storage and manipulation of information provided by improvements in semiconductor and related technologies. 7 - In the 1980s, analysts and practitioners predicted that the 'convergence' of computer and communications technologies through digitalization would lower the barriers to entry of mainframe computer firms into telecommunications equipment, and vice versa. Many firms tried to diversify into the other market, often through acquisitions or alliances, e. g. IBM bought Rohm, AT&T bought NCR. Most proved unsuccessful, in part because the software requirements in the telecommunications and office markets were so different. 8 - The 1990s similarly saw commitments in the fast-moving fields of ICT (information and communication technology) where initial expectations about opportunities and complementarities have been disappointed (see Box 3. 2). For example, the investments of major media companies in the Internet in the late 1990s took more than a decade to prove profitable: problems remain in delivering products to consumers and in getting paid for them, and advertising remains ineffective. 9 There have been similar disappointments so far in development of 'e-entertainment'. 10 - The Internet Bubble, which began in the late

1990s but had burst by 2000, placed wildly optimistic and unrealistic valuations on new ventures utilizing e-commerce. In particular, most of the new e-commerce businesses selling to consumers which floated on the US and UK stock exchanges between 1998 and 2000 subsequently lost around 90% of their value, or were made bankrupt.

Notorious failures of that period include Boo. com in the UK, which attempted to sell sports clothing via the Internet, and Pets. com in the USA, which attempted to sell pet food and accessories. Incrementalist Strategy Given these conditions, 'incrementalists' argue that the complete understanding of complexity and change is impossible: our ability both to comprehend the present and to predict the future is therefore inevitably limited. As a consequence, successful practitioners – engineers, doctors and politicians, as well as business managers – do not, in general, follow strategies advocated by the rationalists, but incremental strategies which explicitly recognize that the firm has only very imperfect knowledge of its environment, of its own strengths and weaknesses, and of the likely rates and directions of change in the future. It must therefore be ready to adapt its strategy in the light of new information and understanding, which it must consciously seek to obtain. In such circumstances the most efficient procedure is to: 1. Make deliberate steps (or changes) towards the stated objective. 2. Measure and evaluate the effects of the steps (changes). 3. Adjust (if necessary) the objective and decide on the next step (change). This sequence of behaviour goes by many names, such as incrementalism, trial and error, 'suck it and see', muddling through and learning. When undertaken deliberately, and based on strong background knowledge, it has a more respectable veneer, such as: -

Symptom Æ diagnosis Æ treatment Æ diagnosis Æ adjust treatment Æ cure (for medical doctors dealing with patients) - Design Æ development Æ test Æ adjust design Æ retest Æ operate (for engineers making product and process innovations)

Corporate strategies that do not recognize the complexities of the present, and the uncertainties associated with change and the future, will certainly be rigid, will probably be wrong, and will potentially be disastrous if they are fully implemented. But this is not a reason for rejecting analysis and rationality in innovation management. On the contrary, under conditions of complexity and continuous change, it can be argued that 'incrementalist' strategies are more rational (that is, more efficient) than 'rationalist' strategies. Nor is it a reason for rejecting all notions of strategic planning. The original objectives of the 'rationalists' for strategic planning - set out above - remain entirely valid. Corporations, and especially big ones, without any strategies will be ill-equipped to deal with emerging opportunities and threats: as Pasteur observed '... chance favours only the prepared mind'.<sup>12</sup>

### Implications for Management

This debate has two sets of implications for managers. The first concerns the practice of corporate strategy, which should be seen as a form of corporate learning, from analysis and experience, how to cope more effectively with complexity and change. The implications for the processes of strategy formation are the following:

- Given uncertainty, explore the implications of a range of possible future trends.
- Ensure broad participation and informal channels of communication.
- Encourage the use of multiple sources of information, debate and skepticism.
- Expect to change strategies in the light of new (and often unexpected) evidence.

The second implication is that successful management practice is never fully reproducible. In a complex world, neither

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the most scrupulous practising manager nor the most rigorous management scholar can be sure of identifying – let alone evaluating – all the necessary ingredients in real examples of successful management practice. In addition Innovation ‘ Leadership’ versus ‘ Followership’ Finally, according to Porter, firms must also decide between two market strategies: 1. Innovation ‘ leadership’ – where firms aim at being first to market, based on technological leadership. This requires a strong corporate commitment to creativity and risk-taking, with close linkages both to major sources of relevant new knowledge, and to the needs and responses of customers. 2. Innovation ‘ followership’ – where firms aim at being late to market, based on imitating (learning) from the experience of technological leaders. This requires a strong commitment to competitor analysis and intelligence, to reverse engineering (i. e. testing, evaluating and taking to pieces competitors’ products, in order to understand how they work, how they are made and why they appeal to customers), and to cost cutting and learning in manufacturing. However, in practice the distinction between ‘ innovator’ and ‘ follower’ is much less clear. For example, a study of the product strategies of 2273 firms found that market pioneers continue to have high expenditures on R&D, but that this subsequent R&D is most likely to be aimed at minor, incremental innovations. A pattern emerges where pioneer firms do not maintain their historical strategy of innovation leadership, but instead focus on leveraging their competencies in minor incremental innovations. Conversely, late entrant firms appear to pursue one of two very different strategies. The first is based on competencies other than R&D and new product development – for example, superior distribution or greater promotion or support. The second, more interesting strategy, is to focus on

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major new product development projects in an effort to compete with the pioneer firm. 18 Generic Market Strategies for Firms According to Porter, there are also four generic market strategies from which firms must choose:

1. Overall cost leadership.
2. Product differentiation.
3. Cost focus.
4. Differentiation focus.

As is shown in Table 3. 1, the choice of product strategy has direct and obvious implications for the choice of technology strategy, in particular for priorities in product and process development. Thus, in consumer durable goods markets like automobiles, consumer electronics and 'white (kitchen) goods', we can observe a range of products with different trade-offs between performance and price, with each aiming at specific market segments, and each requiring different choices in the balance between product and process innovation. Porter insists on the importance of these choices: he argues that firms that get 'stuck in the middle' between cost and product quality will have low profits.