A critical analysis into the accumulation of marketing knowledge at the level of the firm

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Abstract. Rossiter (2001) points out that marketing, as a discipline, has been unimpressive to date at formulating a body of generalizable marketing knowledge. We agree that this is the case, not only at the highest level of generalizable knowledge, but also at the brand level within the firm. We address the firm-level of marketing knowledge. In keeping with a suggestion by the AMA Task Force on Marketing Knowledge (1988) and the belief that a problem correctly identified is a problem half solved, we identify and discuss six impediments to the accumulation of marketing knowledge at the level of the firm. We suggest remedies for these impediments and conclude with an example of a marketing knowledge system that one large retail firm employs. Key Words • marketing guru • marketing information systems • marketing knowledge • marketing orientation • marketing practice • marketing theory

Rossiter (2001) continues a large dialog that has been going on for some time (AMA Task Force, 1988; Hubbard et al., 1992; Holbrook, 1995; Leone and Schultz, 1980; Myers et al., 1979; Myers et al., 1980; Porter and McKibbin, 1988; Shrivastava, 1987) about the lack of accumulation of marketing knowledge. Presumably, it is academics who are charged with the task of accumulating
marketing knowledge. Academics are motivated to document generalizable principles of marketing knowledge, but they have limited exposure from which to do so. This is because academics are not often in the field, or when they are it is in a consultant’s role on a specific project basis. Also, only where budgets warrant the use of academic consultants do academics typically get involved. So the problems that they work on tend to be a subset and not necessarily typical of the minutiae or the range of marketing problems that the practitioner must confront daily. Practitioners, in contrast, have continual exposure to a steady stream of marketing problems. But they have a different emphasis than academics, in that they are measured on the basis of current, specific results. This reduces the motivation for practitioners to put much emphasis on developing generalizable marketing knowledge.1 In the words of the AMA Task Force (1988: 5) ‘there is no reward system in the practitioners’ world that compensates them for the time and effort required’.

At the level of the firm, managers (practitioners) operate with a marketing plan for a particular brand. As Rossiter (1994) put it, the marketing plan is a ‘theory in use’ that is tested on a single set of data (SSoD) and is usually developed ‘with a little induction from the manager’s previous experience, but rarely after a big induction of generalizations that academics have formulated previously’ (1994: 118). In the marketing plan, however, are numerous micro-level assumptions and projections, in other words, micro-theories. It is at this more micro level that managers, we believe, do have marketing knowledge, particularly when they have been using procedures that entail a continuity focus, such as continuous tracking research (Sutherland and Sylvester, 2000) or ongoing analysis of syndicated data. These micro-level theories are tested, in continuous tracking studies, on what amounts to many sets of data (MSoD) over time or in different geographic territories. We argue accordingly that knowledge, at the more micro level of the plan, is accumulated by individual practitioners although it is seldom documented in a form that makes it readily usable by others.

We believe that general strategic principles are rarely useful to managers precisely because they do not specify the contextual contingencies as to when such a rule applies and doesn’t apply. In marketing, the context for application of such ‘rules’ seems crucial. However, Cornelissen (2001) points out that, ironically, fuzziness rather than precision in generalizations may serve the advocacy needs of some practitioners who can pragmatically use that vagueness (or bend it) to support their own marketing plans (within the organization). That is, they claim that their recommendation is based on a general rule, but a rule that is vague enough to support a range of quite different recommendations at the micro level. Fuzziness and overgeneralization may facilitate advocacy of a marketing plan but it is a ‘theory in use’ that ultimately gets tested in the market place (SSoD) and its success will be governed more by the substance of the marketing knowledge upon which it is based than the cleverness of the arguments used to sell it internally. We argue that, in relation to substantive knowledge, generalization itself is not characteristic of what goes on inside the organization in everyday marketing with marketing practitioners. Marketers simply tend not to encode their findings and
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experience in an explicit form as marketing knowledge. This simply is not their goal.

We suggest that it is the artifact of both academics and practitioners being captive to their respective role and reward structures that contributes to an unimpressive result in terms of formulating a body of generalizable marketing knowledge. In this paper, we focus on responding to the call by the AMA Taskforce on Marketing Knowledge (1988) to identify specific impediments operating on practitioners.

We argue that a considerable amount of marketing knowledge is accumulated at the level of the individual firm (as assumed by various authors, e.g. Menon and Varadarajan, 1992; Kohli and Jaworski, 1990) but that it fails to be harvested. It fails Rossiter’s criterion that it ‘must exist independently of a practitioner’s ability to use it, so that marketing knowledge can be documented and passed on to others’ (2001: 10). We argue that because such ‘knowledge’ is not shaped into strategic principles and documented in such a way as to make it usable (or really re-usable) by others, this un-harvested, ‘wasted knowledge’ is a different thing than ‘non-knowledge’ or no knowledge existing at all. There is an ‘encoding and documentation gap’. We now explore why this gap occurs and draw attention to some of the key impediments that we see as being systematic limitations on the capturing, building, and development of marketing knowledge within the firm.

Impediments to marketing knowledge within the firm

Impediment 1: No attention to institutional memory

The first problem that militates against the accumulation of effective principles (both strategic ‘if, do’ principles and market research principles ‘if, use’ as defined by Rossiter, 2001) has to do with a lack of recognition of the importance of the ‘institutional memory’ in regard to marketing knowledge (Sinkula, 1994; Cross and Baird, 2000). Rarely do organizations and marketing departments aim to foster, continually develop and nurture any systematic, long-term accumulation of explicit knowledge (O’Dell and Grayson, 1998; Ruggles, 1998). Time horizons are generally set too short for that outcome.

This is not to say that marketing knowledge is ignored entirely; far from it. Having well-trained people with good marketing knowledge and skills is recognized as crucial to the company’s likely success (Argyris and Schön, 1978). However, the emphasis here is on recruitment and retention of personnel with a high level of knowledge and skill rather than attempting to document and accumulate the knowledge itself into the institutional memory of the company. Internal training programs likewise recognize the need for transmission of knowledge and skills, from those more experienced to those less experienced, but again the emphasis is on transmission rather than explicit documentation and accumulation of corporate capital in the form of a knowledge base. Companies very often act as though knowledge in the institutional memory is intrinsically bound into
their human capital. The problem with a corporation having its institutional memory located dominantly in its human capital is that at any time, it can 'walk'.

Where else then does marketing information reside, other than in people's heads? To some extent it resides in documents. Reports, memos, e-mails, and other communications are what companies prepare to encapsulate what has happened, what is happening, and what is intended to happen. But this is not necessarily marketing knowledge because one aspect of the demarcation of marketing knowledge is that it be useful or reusable for a new marketing problem or situation. In some cases, this motivates a firm to marshal resources behind the development of an 'embedded system' to make this into more formal knowledge and provide an ongoing solution. We have more to say on 'embedded systems' later but such developments are, at this stage, very much the exception and contrast with the traditional casualness of encoding and storage that this type of information traditionally receives. The lack of diffusion of the results as 'marketing knowledge' is underlined by a personal example:

Some years ago, one of the authors undertook a market research project for a large floor tile manufacturer who wanted to develop a methodology for picking which new tile designs would be good sellers. Extensive research was carried out and was fruitful in developing the methodology for making the correct determinations. The method was tested successfully, the client was happy and began applying it. However, about six years later, the same tile manufacturer contacted the author's company about a new research project. Curiously it had the same objective as the one six years earlier. This was puzzling until it was realized that all the marketing personnel in that company had turned over – not one of them had been there six years earlier. The knowledge of what had been done before had somehow been lost to the company. Imagine the amazement, then, when the author was able to provide a solution at no cost by providing the original research report retrieved from his research company archives that revealed their company had conceptualized and researched the same problem before.

This example underscores the importance of, and the difficulties involved with recognizing, developing, feeding, and protecting a corporation's institutional memory.

The organization's vulnerability as a result of the 'encoding and documentation' problem has given rise within information technology to the field of knowledge management decision support systems (Davenport et al., 1998; Van Bruggen et al., 1998; Wierenga and Van Bruggen, 2000). However, developing such systems and getting them to work successfully is critically dependent on accessing and encoding the current state of marketing knowledge within the firm. Which leads us to impediment 2.

Impediment 2: Little attempt to generalize from each specific project

The second and corollary problem that militates against the accumulation of strategic and research principles is the widespread tendency to regard each research project as if it were completely domain-specific. There is little importance attached to translating the project's findings into more generalizable propositions. We believe a substantial impediment to the generation of marketing
knowledge and its accumulation is that this issue is hardly recognized, let alone addressed by companies or by institutions involved in the training of people for marketing careers. Specific research findings are all too often implicitly regarded as problem-specific and it is rare that any attempt is made to try to shape them into more generalizable strategic principles suitable for encoding in some sort of long-term marketing knowledge store (Menon and Varadarajan, 1992).

We now provide two case examples to illustrate. The first occurred during the introduction of a new brand of lemonade:

One of the authors once worked for a leading soft drink manufacturer in Australia. At that time the majority of all soft drinks were purchased in large bottles in supermarkets by the household shopper. The company had launched a new brand of lemonade that was not doing well in the marketplace. Considerable research was undertaken to determine why. Several projects produced contradictory and confusing results. Reaction to the taste of the product was bimodal, with a clear majority preferring it but a significant minority actively disliking it – though not a sizeable enough minority to account for the product’s failure. The research team sensed that something was being missed. A month later, during the cleaning out of a filing cabinet, they happened on a research report from several years earlier. Perusing the summary of main findings, they noted a key reason why lemonade had a larger share than cola or any other flavor in the market. It was because lemonade tended to be consumed by all members of the household whereas colas and other flavors tended to be liked by some individuals but rejected by other family members. These observations eventually crystallized into an understanding that if one person in the household was among the minority who did not like the new product, this one person’s dislike was sufficient to result in a compromise to buy an alternative product that was acceptable to the entire household. Follow-up research confirmed this hypothesis. Such a result is generalizable as a principle along the following lines: ‘If it is a “sharing product” category (a product used by a group), then a brand preferred by the majority of individuals is nevertheless likely to suffer in the marketplace when the preference distributions across individuals is bimodal at the extremes and an acceptable compromise product exists’.

How likely is it that personnel who are measured on the basis of current results would pause long enough to develop explicit marketing knowledge of this type for possible future re-use? In order to successfully shape such findings into generalizable principles, the demands involved are not trivial. Notice that in this case, the successful outcome required not only prerequisite motivation but also previous documentation (archived research reports); accessibility (easy access to past research reports); awareness that past research existed that was relevant (some form of indexing); interpretation and conceptualization (in this case, arriving at the concept of a ‘sharing products’ category); and time (to search, retrieve, and generalize the result).

A second example of failure to generalize projects’ results concerns the introduction of a new version of baked beans (Ingoassia, 1980):

Green Giant produced canned baked beans that were quite bland in taste. The company decided to test a spicy version of the product, named ‘Oven Crock’. The new spicy version was preferred by 4 to 1 in blind taste tests. The product was launched but did very poorly and never achieved anything near the sales of the bland version. On further investigation into what was going on, the brand team learned that there were two segments of consumers. The smaller segment actually liked bland baked beans best. The other segment liked spicy baked beans – so much so that they wanted to apply their own spices and therefore preferred to purchase bland
baked beans to which they could add their own spicy ingredients. This knowledge clarified the market failure and resulted in an epiphany for the brand team. The generalizable result might be: ‘If a product is easily customizable by the purchaser, then a basic product is likely to have advantage in the market even though preferences (in comparison tests) may appear to favor the specialized product’.

Perhaps many readers could add examples like these from their own experience. Notice that our examples are of the strategic principles type (‘if, do’ statements that imply some action that can be influenced by the marketer). These principles are, however, below the more complicated formulation that would be necessary to take into account the consequences of reactions by a competitor (a point to which we will return in a subsequent section).

Impediment 3: The difficulty of specifying contingencies

The foregoing examples illustrate that marketing generalizations are highly dependent on contingent statements and that, in fact, the contingent statements may often be quite difficult to infer at the time of the experience. While Rossiter (2001) is rightly critical of published expert practitioners (‘gurus’) for often not adequately specifying contingencies, in truth the full specification of contingencies is not as readily apparent in marketing as we would like it to be. It is easy to unknowingly overgeneralize a principle. The following example from a marketing experiment is instructive about this point:

A restaurant owner decided to assess the effect of music on sales by running an experiment. The owner randomly assigned the conditions of no music, jazz music, or classical music to each night of the week for 18 weeks, being sure to rotate the music conditions randomly across the days of the week. Analysis of the data showed that the jazz music resulted in the highest average sales no matter what night of the week it was played. The obvious indication seemed to be that the restaurant should play jazz music every night. However, there is a subtle flaw in this thinking that has to do with the generalizability of this experimental finding. The reader is encouraged to stop here and re-read the description of this situation – can you spot the flaw?

Here is the dilemma. When jazz music is being played every night, regular patrons of the restaurant will come to know what music to expect and, at the limit, the restaurant might be typed as a ‘jazz place’. But during the experiment, patrons never knew ahead of time what music would be played the night they visited. The true finding was that the jazz music created an atmosphere causing patrons to stay longer and consume more beverages. However, when jazz is played every night the then-anticipated music might become a ‘restaurant selection’ issue and, therefore, might be expected to have a much different effect on sales (either positively or negatively, but not tested for in the experiment).

This example shows how subtle the generalization decision is of findings in one situation being applied to a ‘similar’ situation (in this case a fallacious generalization) setting. This is not to say that such generalization cannot be done, but that it must be done with the full set of contingency conditions, some of which may not be considered at the time.

If we return briefly to the earlier ‘shared products’ example, we might note by way of further illustration that the applicability of the 'shared products rule' as
specified was eventually overtaken by structural changes in the lemonade market – an unforeseen contingency:

At the time of that case (the 1970s), the majority of soft drink volume was in large bottles through supermarkets. This pre-dated the introduction of price-competitive, multi-pack, small-sized cans and bottles in supermarkets. These new packaging introductions obviated some of the operability of the ‘shared products rule’ to the soft drink market since the new packaging introductions enabled the household buyer to efficiently cater to different preferences of individual family members by purchasing multi-packs (and even multi-flavor, multi-packs). Of course, one might argue that this contingency could be covered by a statement incorporated in the original contingencies such as, ‘provided the product category is one where the only available package size is family-size’. But this seems to require an unrealistic level of foresight.

As we discuss later, these ‘if, do’ principles are better regarded to be like species which, to survive, will require adaptation to environmental (market) changes over time.

**Impediment 4: The reactions of competitors**

The existence of competitors is somewhat unique to marketing as a discipline (compared to, say, physics or psychology) and this is perhaps the biggest complication for specifying contingencies (Thomas and Soldow, 1988). Marketing is essentially a game in the sense that there are competitors (and other forces such as consumer groups or regulators) who may react to, and try to counter, what the marketer does. Playing the game is complicated by reactions and counter reactions. Consider by analogy the game of chess. A person can have complete knowledge about the goals of the game (to capture the king), and the rules of the game (most essentially how the pieces move) and conceivably not know much about how to beat an opponent, particularly one who is a good player. So, what does a good player know? The good player knows what is a good move in terms of the possible reactions of the competitor to it, and can extrapolate this thinking several moves into the future (and later, to the end of the game). Such knowledge and judgment is gained mostly by experience (even in the game of chess).

Since marketing is a game, one can usually not have an ‘if, do’ rule that ignores the anticipated competitor’s response in the ‘if’. This makes for much more complex strategic principles than have been envisioned by general rules of marketing management. In fact, because firms (and brands) differ in the competition they face and the nature and likelihood of competitors’ reactions, strategic knowledge principles must be firm- and indeed brand-specific (Kerin and Harvey, 1987; Moorthy, 1985; Rossiter, 1994). This means they should be formulated by good game players. What will work (or what will happen) depends not only on the response of the market, but on that pesky competitor whose efforts typically are directed at thwarting the very goal that the marketer is trying to achieve (Oxenfeld and Moore, 1978).

It is perhaps significant that most job specifications for product managers, senior product managers and marketing directors require ‘years of experience’,
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'type of experience' and 'track record' but not 'competitive success' explicitly. This is evident from even a casual perusal of the job specifications for advertised marketing positions. 1 Whereas it could be argued that in specifying these criteria, companies are using them as surrogates for competitive game-playing ability, perhaps this ability should be sought directly. This is not dissimilar to how one would hire a champion chess player.

Impediment 5: Brand manager rotation

One might imagine that if an individual is assigned to a brand, that person is going to build up a good deal of job knowledge about that product-marketing situation. The person is going to learn what customers want, what customers think about in the category and about the competitors in the field, what ads have worked, what promotions seem to pull best, and so on. After a few years, this person would have digested scores of focus-group and customer-survey results, have analyzed each Metro area and know that, say, Houston is a problem in terms of market share because of an argument there between the food broker and the regional manager of the major supermarket chain. So, because of all this job knowledge, an observer might expect that a company would want to keep the brand team together as long as possible so as not to lose that knowledge.

But no, exactly the opposite seems to take place at leading companies like Procter & Gamble and Clorox. Brand managers are rotated quite frequently and actually become paranoid about their careers if they have not been rotated to a new brand within about two years (which at some companies is a typical brand assignment term before 'promotion' to a new brand). In fact, brand rotation is part of the marketing training program in many firms. If that is the case, what are these people learning as they are being groomed to become brand managers, first on smaller brands, and then with more experience and presumably marketing successes, to larger brands? Certainly it cannot be the job knowledge related to the specifics of that brand, so it must be some other sort of generalizable knowledge.

The key deduction from the fact of brand rotation (over the past 30 years at numerous successful companies) is that marketing knowledge is not only about the facts of a market (i.e. 'what is'). As important as that level of knowledge must be, there must be something more general and more 'portable' as the product manager moves on. There are undoubtedly many forms of this portable marketing knowledge, apart from strategic principles in the domains they have experienced. We suggest that implementation knowledge is one type of this portable knowledge and is a crucial component of marketing knowledge. It is not just management knowledge – it is 'marketing management' knowledge, that is, 'how to' knowledge that is specific to marketing. This is a further impediment to encoding and documentation of marketing knowledge, as discussed next.
Impediment 6: Implementation knowledge

Marketing personnel must have knowledge (and therefore marketing-related knowledge) about how to get things done in the marketing realm, both within their own company and across the boundaries into the service companies that so often are fundamental to the execution of a strategy (e.g. the ad agency, the food broker, the company running the in-store sample program, etc.). Whereas in a chess game, implementation is automatic (the pieces do faithfully move to the places designated according to the player’s strategy), in the marketing game implementation is definitely not to be taken for granted (see Bonoma, 1985 for an excellent treatise on this). Implementation is always a critical component of success for a marketing strategy and constitutes much of what marketing managers and brand managers spend their time pursuing. What differentiates the success of one competitor over another in the marketplace is often not just the particular strategy chosen, but the vigor with which it is implemented (Simkin, 2002).

Marketing management, therefore, requires knowledge and skill about how to get other people and organizations to do what the marketing manager understands needs to be done. Often this involves ‘selling’ the strategy, or ‘internal marketing of the marketing strategy’. This is the basis of rituals such as the ‘national sales meeting’ or the ‘agency review’. How can the brand manager get the sales people behind the brand strategy? How can the brand manager get the ad agency to come up with the right ad? The marketing manager cannot simply tell these people what to do, but must (a) get them to understand what they are to do, and then (b) get them motivated to do it and to understand that it is in their own best interest to do it. There can be substantial slippage in getting even the best of strategies off the launch pad even when there is goodwill in the hearts of all involved (putting aside frictions such as ‘turf wars’, and individual ‘grandstanding’).

Implementation is not just talking and persuasion, however. The implementation plan needs to be in writing. As Ambler (1992: 10–11) explains:

When the talking is done, put the brief in writing and have everyone sign, provide thumb prints, and give blood, seminal fluid or other incontrovertible genetic identification of agreement. In practice both sides cheat. Roles reverse like spinning tops. The reality is that the brief is unimportant; the process leading up to it is what matters. For the process to be effective, however, everyone has to believe the brief to be important – hence the signing ceremony. Time spent fighting over the brief is rarely wasted.

Experienced and successful brand managers have learned Ambler’s generalization, or their own equivalent, and have had it indelibly reinforced by their own experience.

Some readers might consider that implementation knowledge is out-of-bounds for inclusion as marketing knowledge. Indeed, Rossiter (2001) excludes ‘tacit’ procedural knowledge from the forms of marketing knowledge because it is not (easily) transmissible knowledge. But to leave out implementation knowledge is to miss a critical component of marketing success. It is marketing knowledge simply because of the fact that only marketing managers can understand the intricacies of
the organizational relationships in this area, to say nothing of the fact that they ultimately are responsible for seeing the marketing strategy through into the field – it is in their job description and it is their responsibility. The benefits of such implementation experience are both generalizable (e.g. to other advertising agencies and other brands) and transportable (to other brand groups and to other companies). However, because the implementation experience resides in the individual manager, the only way it can be transmitted is by emulation by junior managers.

Discussion and conclusions

Formation of the AMA Task Force on Marketing Knowledge resulted in their published report (1988) specifying that: 'Forces working against the codification and dissemination of marketing knowledge by practitioners constitutes a major hindrance to the long-term development of knowledge in marketing' and that 'An effort to identify specific impediments seems warranted' (1988, 18). Therefore, in light of this unfilled gap, we have outlined six impediments to the accumulation of marketing knowledge at the firm and brand level. To summarize: (1) There is too little ‘institutional memory’, (2) too little effort at generalizing from specific projects, without recognizing that (3) the statement of the contingencies for strategic principles is critical. Added to these is that (4) marketing often involves competitors which can further expand the contingencies that might need to be stated. Finally, internal to a company are the pragmatic issues of (5) job rotation and (6) marketing plan implementation.

We have suggested that testing on multiple sets of data (MSoD) at the micro level does go on, usually informally but sometimes formally. An example of the more formal kind might be metropolitan areas or sales districts treated as experimental units – some areas receiving the base budget +15% and others the base budget -15%. In this way practitioners can accumulate specific marketing knowledge for use in the next period (Little, 1966). We argue that knowledge at this micro level is accumulated by individual practitioners but is all too rarely encoded in a form that makes it readily usable by others and, even when it is, it is not systematically harvested. As Simkin (2002) notes: ‘even when rigorous marketing analyses were being undertaken, the output often fails to feed into the strategizing of marketing planning’ (2002, 122). So although knowledge does exist, there isn’t nearly as much accumulation of it as there could be – due to poor knowledge-capture mechanisms in companies, low motivation to generalize, and the treatment of every new marketing plan as a theory in isolation.

Solutions to these problems will not be quick or easy to address. We envision a three-pronged remedy employing (1) a strategic principles database, (2) new organizational structures to accommodate it, and (3) embedded systems to implement results as they emerge from the database.
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1. Strategic principles database

What is needed is the encoding of findings into the institutional memory so that more of what is learned is made explicit rather than being left implicit. The need is not just to capture the data but to transform it into a knowledge base – a database of strategic principles and also market research principles. Our experience is that the adoption of a continuity mechanism such as continuous brand tracking will help in making 'if, do' observations explicit. It helps shift the focus to one of continuity instead of just one project after another. A continuous perspective helps identify links and parallels between what is being contemplated currently and what has been done in the past. Such continuous mechanisms act as an ongoing spinal column to support the integration of information over time. Further, such mechanisms foster the organizational climate for what Ehrenberg (1994) has called the ETET-style of scientific method for marketing. Continuous brand tracking services and continuous syndicated data thus help to encourage a corporate culture of 'evidence' for 'theories in use'.

As discussed in conjunction with impediment 3, specifying contingencies so that a strategic principle is unaffected by time and structural changes to the market probably requires an unrealistic level of forward anticipation. To keep the strategic principles database current over time, a critical review will be needed periodically or whenever the knowledge is to be used. Our view is that strategic principles (the 'if, do' principles) are better regarded as species which, to survive, will require adaptation to environmental (market) changes. This implies that when these principles are retrieved they must be reviewed for current applicability to new situations. This evolutionary view of strategic principles as dynamically adaptive rather than static is not without precedent. It makes marketing knowledge analogous to legal case law or taxation accounting where case detail is preserved and reviewed in light of newly developing situations.

Achieving the learning loop of continuous testing on MSOd, where results get encoded into a strategic principles knowledge base, is not easy to achieve and requires an organizational structure to accommodate the effort.

2. Organizational structure

Attention to the institutional memory, attempting to generalize from each specific project, and specifying contingencies are tasks that are wrapped up in role structures, job descriptions, and incentive systems affecting annual reviews and promotion. Such structures are also wrapped up in corporate culture, and they must prevail in the face of resistance from the demands for immediate, bottom-line results.

The necessary new organization will, therefore, require a redefinition of roles for marketing personnel to include an expectation that they will generalize marketing projects' findings and contribute to the institutional memory, where possible. This is analogous to managers who are expected to groom their subordinates for promotion, albeit sometimes to other brands. Such incentives
to generalize need also to be instituted in the market research department (but definitely not just confined to that area). Ideally, career advancement and annual reviews for marketing personnel would look at contributions to the institutional memory, much as academics are evaluated partly on their contribution to the published literature. Marketing personnel might be required to build a case detailing their contribution as input to the review process. Since in the short term there is a time-profit trade-off, requiring this in the annual review is an appropriate mechanism.

3. Embedded systems emergent from the strategic principles database

With an appropriate corporate structure, an embedded system can be developed to implement micro-level knowledge after it is learned. In narrow, prescribed areas, as noted earlier, the strategic database and organizational structure may result in the motivation and ability to marshal resources behind the development of a marketing-oriented decision support system to encode specific findings as more formal knowledge to provide an ongoing solution. Both authors have been extensively involved in developing such ‘embedded systems’ but these are today still very much the exception, particularly as a result of the fact that ‘expert systems’ were very much ‘over-hyped’ in the early 1990s. Such encoding contrasts with the traditional casualness of encoding and storage that specific findings traditionally receive, but developments in computers and information technology in the longer term can be expected to give more and more impetus to the embedded systems approach. However, even when developing a decision system, it is first necessary to extract the marketing knowledge that is to be embedded in such a system, and this requires the existence of a strategic principles database.

In summary, what is needed is an organized and dedicated approach keying on (1) extracting and storing strategic principles and a database, (2) building organizational structures to ensure that this takes place, and (3) the development of an embedded system to implement the strategic principles as warranted.

We conclude with an example – a system envisioned by a major company as one step towards a partial solution to the six impediments we have identified:

In retail firms, the equivalent of marketing managers are the executive retail buyers. Retail buyers accumulate considerable marketing knowledge over time but encoding this and making it more widely available is the challenge that one large national retail chain in the US has set for itself. The firm intends the buyers to continuously experiment and learn. The intention is to pool their findings and learning in order to have these available on-line for sharing across buying departments and readily accessible by future buyers when the current ones move on to new jobs.

To achieve this, the retailer has commissioned a project to develop an intelligent system that among other things will empower the executive buyers with an experimental design tool. It will be used interactively by buyers to design and implement specific tests. There are hundreds of stores in the chain, so this provides an ideal test-bed for such experimentation. For instance, the buyer with responsibility for sweaters could easily manipulate price at three levels ($34, $36, or $42), shelved at two levels (hanging on racks or in cubes), and with different numbers of
colors in the line (3 colors, 5 colors, or 7 colors). The system would likely steer this retail buyer toward a fractional factorial design with a replication factor of 15 (e.g. 5 stores in each experimental condition over 3 weeks, with each week taken as a 'repeated measure'). The system will act as a computer-based agent to control the test in the field as it is implemented and to analyze the results as they are accumulated, all in an automated way. It will keep track of the test over time – determining what stores are assigned to what conditions, sending instructions to those stores via a cash-register-based e-mail system, collecting the sales data from the test (done automatically by stored data queries), analyzing the results, and reporting the outcomes to the executive buyer in graphical and statistical form.

All dates and schedules are triggered within the system and final results are automatically archived along with the original statement of objectives for the test, the design details, and the results of store conditions and sales outcomes. The system will allow for later review and even re-analysis of the results at a subsequent time. In addition, the system is intended to handle multiple tests that are going on simultaneously by different buyers, in different stages, being sure that the tests do not interfere with one another by overlapping in the same categories in the same stores at the same time. From beginning (design) to end (analysis and reporting), everything in this system is to be recorded in a specific data structure as records in an integrated corporate database.

In this way, these busy executive buyers will be enabled to experiment more, and more often. Ease of design, implementation, control, and analysis means they will learn much more from the effort invested. Automatic capture ensures the learning becomes part of the institutional memory.

We now review how such a system might address the six impediments that we have identified:

Institutional memory: The system specification pays a great deal of attention to the institutional memory because each test begins and ends as records in a special data structure which preserves the information. This becomes, essentially, a strategic principles database.

Generalizing from specific projects: Attention is focused on ‘if, do’ conclusions as output while applying sound experimental design principles and statistical significance testing to generate reliable and valid findings from each test which then constitutes generalized knowledge.

Statement of contingencies: Many of the important contingencies are stated automatically in that they are, for the most part, the manipulations of the experiment, along with the stores involved, the dates of the test, etc. all archived in a way that the results can be retrieved and even re-analyzed at a later date.

Dealing with competitors: Each store has a different set of national competitors’ stores located around it. These competitors are not expected to react to local tests that are being run continually and in many different categories. When findings are rolled out nationally, however, competitive reaction will have to be contemplated and addressed.

Job rotation: Job rotation is addressed indirectly. The system shares the learning across all executive buyers and results are archived but continuously available. The historical results are planned to be used as a training device, and this is expected to make rotation more feasible without consequent loss of marketing knowledge.
Implementation: The system itself becomes the implementation agent, though it calls in the executive buyer if corrective action is needed. The test conditions are monitored by the cash register system. If the responsible store-level personnel fail to respond to the system-triggered notifications about assigned store conditions, then the executive buyer is alerted and provided with the name and telephone number of the person to contact at that store to determine what has gone wrong so as to take remedial action. Empowered by this system, a day is envisioned when a buyer who is contemplating a promotional markdown of 25% along with certain signage can review many related findings from many past tests that have dealt with such changes as an ongoing experiment. Such a system is a major corporate commitment that would, until recently, have been prohibitively costly and complex. Advances in computer power, storage technology, and automatic analysis capability are increasingly enabling such systems to be contemplated.

Obviously the flood of information that has to be managed and its transformation into encoded knowledge is a huge challenge, but systems like this represent an encouraging first step in the vision for successfully accumulating marketing knowledge at the firm level.

*Where is the wisdom we have lost in knowledge?*  
*Where is the knowledge we have lost in information? – T. S. Eliot*

**Notes**

1. Even if practitioners were interested in creating generalizable marketing knowledge they might well want to keep it on a proprietary basis. Procter & Gamble is one firm that reputedly does this and probably many others too.
2. In a small-scale study, a collection of 34 position statements collected on the internet were analyzed to arrive at these conclusions.
3. ETET refers to a series of empirical and theoretical steps (e.g. empirical observation, then theoretical hypothesis, then more empirics, a refined theory, still more empirics, and so forth).

**References**


The accumulation of marketing knowledge at the level of the firm
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