What to codify: marketing science or marketing engineering?

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Rossiter (2001) has provided a stimulating and provocative 'call to arms' to our field. He envisages a brighter future where there is broad agreement about the definition of marketing concepts and where our structural frameworks are 'comprehensive and proven'. More critically he asks us to develop our own strategic and research 'principles', allowing us to offer good solutions for the diverse market and competitive situations in which marketing practitioners will find themselves. In other words, he urges that we codify the body of marketing knowledge into a more defined, systematic and useful form than exists at present. Given the rather poor track record of marketing in codifying knowledge (Armstrong and Schultz, 1993), this is a very bright future indeed. Indeed, it raises many legitimate questions about our ability as a field to progress in this direction and what reforms to our doctoral education, journal review procedures and professional norms might be required to facilitate such dramatic progress.

However, my purpose is not to outline these reforms; rather, it is to ask 'For what purpose does one seek to codify marketing knowledge?' While Rossiter discusses and alludes to many possible purposes he seems to believe that the answer to this question is self-evident: '... It is a task that we cannot avoid if our discipline is to claim that it has a "body of marketing knowledge"' (2001: 22). In principle I agree with him – how could one not – but I would argue (1) that codification might take different forms depending on one's purpose and (2) that for some purposes the returns from codification might be low. I would also argue that it is vital we have clarity about the purposes to which codified knowledge might be put before we embark on the ambitious exercise proposed by Rossiter.

What might be the purpose of codifying marketing knowledge? It is possible to conceive of at least four potential purposes for codifying marketing knowledge.
There may well be more but I will focus my comments around these four and leave any expansion of this list to others. The four are:

1. To facilitate the progress of marketing as a science;
2. To promote the discipline within its institutional and professional environments;
3. To better educate and credential the potential manager; and
4. To provide competitive advantage to the firm.

I will comment on each of these in turn, followed by my overall conclusion.

To facilitate the progress of marketing as a science

If the discipline of marketing aspires to be a science, there would be clear benefits to codification. A more systematic assembly and expression of our knowledge would likely highlight gaps in this knowledge and suggest fruitful areas for future research. It might also expose biases in the field such as the emphasis on consumer product marketing at the expense of industrial or services marketing. Or the bias to understanding American markets at the expense of Asian or European ones. All this would be well and good and a clear stimulus to a more systematic and rigorous approach to our field. It might also encourage the replication and boundary-condition testing that many feel is missing from our ‘science’.

*Different forms of codification: science or engineering?* Then again, it is not clear that a codification scheme that would suit a science would also suit other purposes. For example, while the principles of physics underpin space travel they do not immediately help an engineer build a moon rocket — they must first be translated into an appropriate form for engineering, modifications and approximations are needed for the properties of the actual materials that the engineer intends to use, so forth and so on. Thus, whereas Newton’s principles of action and reaction form the basis for the Apollo moon landing, there was an immense amount of detailed application, simulation, approximation and trial that went into the design of the Saturn V. A similar phenomenon might be said to exist in our more prosaic and less developed field. A strategic principle, such as ‘If yours is a repeat-purchase brand, then get its distribution as high as is practically possible’ (Rossiter, 2001: 16), needs to be applied at the level of a particular industry, market and firm. Again, there is a lot of work to be done to turn this principle into a viable marketing plan, not as much as a Saturn V perhaps, but still a considerable gap to be bridged between theory and application.

The key point is that codification for the purposes of facilitating the progress of science would likely take a different form to that of codification for the purposes of educating an individual manager or providing competitive advantage to the firm. For the former, we seek higher level, more abstract generalizations with precise specifications as to meaning and measurement. For the latter, we need a more engineering-like, situation-specific form of knowledge with models, measures and outcomes that can be applied to the industry, market and firm circumstances, and
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can be used with the types of data available to this firm. With apologies for the Latin this is the difference between 'scientia venditio' (knowing about selling) and 'scientia venditio attingere' (knowing how to apply oneself to selling). It is likely that codification in ways that would support 'marketing science' would suit some purposes, while codification in ways that would suit 'marketing engineering' would suit others.

To promote the discipline within its institutional and professional environments

Colleagues have at various times argued that there is too much overlap between marketing and business strategy, that marketing appears vague and ambiguous in contrast to finance, and that many students find marketing rather too 'squishy' for their taste. Some of these comments are echoed in the writings of Day and his colleagues (for example, Day and Montgomery, 1999). Codification might well serve to counter these arguments. If we can point to a more clearly defined and impressive body of knowledge we can defend our territory against other disciplines and present a more prestigious image to the world. The problem is, of course, that there are multiple audiences here. The scientific codification would appeal to our business school and university colleagues (and, I suspect, to many of us) but it is more problematic whether this would appeal to MBAs or practitioners. Some aspects might. For example, one reason basic finance may be easier to teach to MBAs (leastwise, numerate MBAs) is that the central model is relatively simple to communicate and readily generalizable. However, any scientific codification of marketing is likely to produce a more complex set of knowledge terms and principles than finance and one that may still be difficult to communicate to a student or practitioner audience. Thus these audiences may still be more interested in the 'engineering' approach with tools and approaches for dealing with specific business cases.

To better educate and credential the potential manager

It follows from these arguments that the education of potential managers, when backed by a better codification of our knowledge, is more likely to resemble 'marketing engineering' than 'marketing science'. This should come as no surprise; many of our current classroom approaches (cases, videos, simulations) are in fact educating participants on how to reason and make decisions in specific marketing situations. It is hoped they are based on sound marketing principles but in most classes the specifics dominate the discussion and are often more interesting to the participants. If we focus on education as the goal of codification we are more likely to produce a body of 'engineering' knowledge of the type advocated by Lilien and Rangaswamy (1998) with an increasing toolbox of models and decision-making aids for a variety of situations. Again it is hoped these would be
based on (or at least not inconsistent with) a codified body of scientific knowledge. However, they will take a very different form and be applied in very different ways.

Credentialing. Given the above, any test of the potential manager's skills that we might develop on the basis of more codified knowledge is unlikely to look like the AMA's Professional Certified Marketer™ test. Indeed, the notion that a multiple-choice instrument can test marketing knowledge, let alone marketing decision-making skills, borders on the bizarre. If we take the science route, we are likely to require some examination of the participant's ability to derive and apply complex strategic and research principles. If we take the engineering route, we are more likely to require something akin to a series of 'in-basket' exercises – where the participant is required to demonstrate that they can apply the right model in the right way to the situation posed by the exercise. Neither of these would look like the typical multiple-choice instrument. Rossiter (2001), while leaving this issue somewhat open, appears to favour the science route with a test of codified principles, rather than the engineering route where the participant's broader abilities and knowledge, including tacit knowledge, would play an important role in their performance (just as it does 'on the job'). Indeed, he specifically excludes the tacit knowledge that might be seen by some as an important component of managerial performance.

To provide competitive advantage to the firm

This purpose can quite easily be dismissed or at least de-emphasized. Rossiter himself has pointed out one paradox in an earlier paper (1994). Namely, that anything codified and therefore publicly available does not help the firm differentiate itself from its competitors. Indeed, one can lend strong support to this proposition – from both the perspective of resource-based theory and the emerging evidence about knowledge management in the firm. Resource-based theory (Barney, 1991) argues that competitive advantage stems from resources (increasingly including knowledge resources) that are valuable, rare, inimitable and non-substitutable. By definition codified and publicly available knowledge has none of these properties and the only competitive advantage it might engender is a short-term and non-sustainable one for those firms that implement faster than others. Moreover, the emerging literature on knowledge management (Soo et al., 2002) suggests that firms are finding it difficult to implement useful IT-based knowledge management systems, both because knowledge that is valuable to the firm is often not amenable to simple codification and because valuable knowledge is 'dark power' to many individual employees, leading to strong disincentives to sharing such knowledge within the firm. Given all this, it does not seem either an easy or high-return exercise to develop codified knowledge for the purpose of aiding the firm in competition. We would be better to focus our efforts elsewhere.
Conclusion

I agree with Rossiter that our field needs to move beyond the motherhood statements of the textbooks and develop a more rigorous and systematic body of knowledge. However, there are two approaches to achieving this lofty ambition – marketing science and marketing engineering. The former is needed for the progress of our discipline both internally and in comparison to other competing business disciplines. The latter is needed for the education and credentialing of our students and for professional purposes. Logically one would argue that the two approaches are complementary, with marketing science underpinning marketing engineering. However, they have very different forms of knowledge, appeal to different segments of our discipline, and worse, to segments that are currently not communicating with each other either in the conferences or journals (as evidenced by the split of our discipline into at least three tribes – consumer behaviourists, marketing modellers and the shrinking tribe of managerial types). Hence the best way forward is somewhat unclear. Should we try to codify the principles of consumer behavior first (perhaps seeking to underpin economics with sound behavioral principles) or should we attempt to make our marketing models more applicable to real-life decisions (demonstrating a clearer concern for implementation and adoption)? We need to address such issues of purpose, feasibility and benefits before we start on such an ambitious exercise as Rossiter proposes.

References

David Midgley is Professor of Marketing at INSEAD, Fontainebleau, France. Previously he held positions at the Anderson School, University of California, Los Angeles and the Australian Graduate School of Management. He is the author of six books and over 60 articles, including papers in journals such as the Journal of Consumer Research, Journal of Marketing, Journal of Marketing Research, Management Science, Marketing Science and Organization Science. He is also the author of three major reports on management development. He does research on innovation, global marketing and e-business issues.