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## Innovation in Meaning: Same Product but New Understanding

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**Abstract:** Significant innovations can occur in product meaning even when the product offered by a company essentially remains unchanged. Recent trends in the marketing of some products suggest that we may be witnessing a mode of innovation which occurs through the application of science, whereby the actual product or process functionality does not alter, yet our understanding of what it is or can do is altered. This paper argues that paradigm, process and positional innovation can change the way in which companies, stakeholders and customers understand existing products, opening up potential sources of competitive advantage through significant market extension. Examples of this innovation in meaning are given and the impacts upon the broader stakeholders of a company wishing to pursue such an approach are discussed.

**Keywords:** Innovation typology; Symbolic innovation; Innovation through changing meaning; Science; Branding; New Zealand; Biotechnology; Food and Beverage.

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## 1 Introduction

Recent trends in the marketing of some products suggest that we may be witnessing a mode of innovation which occurs through the application of science, whereby the actual product or process functionality does not alter, yet our understanding of what it is or can do is altered. In this form of innovation, science based R&D is used to understand more about the product, process or service so that the meaning of the product to existing or potential stakeholders is new or significantly shifted. Using current research on innovation through changing meaning, and innovation typologies as a starting point, this paper looks at findings from a research project investigating innovation strategies in two industry sectors based in New Zealand, Food and Beverage, and Biotechnology. We discuss how a number of companies in our sample are pursuing strategies which include innovating their products through changing meanings to gain a competitive advantage. We then discuss the impacts that such a strategy may have on the stakeholders of a company following such an approach.

## 2 Literature

### *Symbolic Innovation*

Innovation through changing meanings is not an entirely new area of study. As far back as 1981 Hirschman discussed product innovations as being generated along two primary dimensions, either through symbolic associations or through technology, and she suggests that “*an innovation that is generated primarily through symbolic changes is one which communicates a different social meaning than it did previously. Its physical form remains predominately unchanged, but the meaning assigned to that form is novel*”<sup>1</sup>. She uses the example of wire-rimmed eye glasses to show how innovation in the symbolic meaning of an existing product can occur. Wire-rimmed eye glasses were introduced in the late 19th century, and became widely diffused throughout North American society until they were largely replaced by plastic frames by the mid-twentieth century. In the 1960’s wire-rimmed eye glasses were once again adopted, this time by members of the student and hippie movements, and they became symbolically identified with the counter culture movements of the time<sup>2</sup>. This example of a fashion driven change of meaning, demonstrates how changes in symbolic meaning are embedded within specific socio-cultural contexts, a fundamental element underpinning the concept of product innovation through meaning. Emphasising the importance of the socio-cultural context within which innovation takes place, Fox (2011), writing on the uptake of aseptic and antiseptic surgical practices of the late 19th and early 20th centuries, argues that when an innovation has arisen through symbolic changes of meaning, *it is the collective social meanings within communities of knowledge that enhance the rate or depth of adoption of the new innovation*<sup>3</sup>. Furthermore, Cavalli suggests that for an innovation to be accepted in a given community, it must find the space and the way to develop shared meanings through a process of *heterogeneous symbolic engineering*, with every new innovation needing to refer to *the symbols and structure of already established communities* if it wants to find the ground for growth.<sup>4</sup>

Building on the discussion of innovation through changing meanings within a socio-cultural context, Dell’Er, Marchesi, and Verganti,<sup>5</sup> and Verganti<sup>6</sup> discuss design driven

innovation, whereby the source of the innovation is more “*the novelty of a product’s language and meaning rather than a product’s technological/functional dimension.*”<sup>7</sup> This work on design driven innovation shifts the design discourse towards a recognition that products are defined not only through their functional attributes and aesthetic form, but also ‘*through the meanings they convey and the dialogue they establish with the consumer*’.<sup>8</sup> Verganti describes innovation on the semantic dimension as being more or less radical. In particular, innovation of meaning is incremental when a product adopts a design language and delivers a message that is in line with current socio-cultural models, and he gives the Swatch watch as an example of a product which changed from being a radical innovation in meaning to offering incremental changes in meaning. At its launch in the 1970’s the Swatch watch radically redefined the watch to be a fashion accessory rather than an expensive piece of jewellery. Now however, a new Swatch watch collection simply ‘*adapts its original meanings to evolutions in socio-cultural trends*’.<sup>9</sup> Companies who successfully follow a strategy of radical design driven innovation develop offerings whose novelty of message and language are more significant than the novelty of either their functionality or their form. Organisations that successfully use this approach leverage their knowledge of both design and of the socio-cultural context within which interpretation of the message occurs. Verganti offers examples of such radical design driven innovation as Alessi’s ‘*family follows fiction*’ kitchenware and the Apple iPod, both of which he describes as being driven by the companies’ vision about possible breakthrough product languages and meanings, and which he argues, could not have been anticipated by potential consumers because of the radical nature of the change they bought about. Alessi’s ‘*family follows fiction*’ kitchenware was launched in 1991, as “*playful, colourful and metaphoric*” objects, designed to turn every day kitchen tools into transitional objects of affection, innovating the meaning of kitchenware into objects that speak to the consumers’ ‘*inner child*’.<sup>10</sup> At the time of the product launch, kitchenware had not before taken on novelty appearances and the range therefore represented a significant departure from traditional kitchenware design. The Apple iPod, a second well discussed example of radical innovation, re-defined the way in which consumers engage with music, driven by Apple’s vision about possible new meanings relating to the consumption of music. The innovation in meaning not only related to the music listening experience, but also to ways in which consumers buy and store music, and it therefore offered a further departure from existing technologies. In this way Verganti argues that the iPod “*has a language and delivers a message that implies a significant reinterpretation of meanings*”<sup>11</sup> associated with the consumption of music and is therefore considered to be a product offering a radical change in meaning.

Common to both of these types of symbolic innovation and innovation in meaning is that the resulting product assumes some form of novelty for either new or existing customers. However, the extent of such novelty and the forms that it may take have been less fully considered.

### *Typologies of Innovation /Innovativeness*

There have been many attempts over the years to provide typologies of innovation including those related to innovation type, such as product, service, or process, and degree of innovation such as radical, really new, or incremental. Included in these typologies are those of Garcia and Calantone (2002) who analysed previous studies to derive definitions for different types of product innovativeness, arguing that changes in technological and/or marketing S-curves are key in distinguishing discontinuous innovations. They proceed to define innovativeness as ranging from radical innovations which “*often do not address a recognised demand but instead create a demand*

*previously unrecognised by a customer*" and embody both new technology and market (with examples such as the steam engine, the telegraph and the world wide web); to really new innovations, argued to *"result in market discontinuity or technological discontinuity but not both"* (as exemplified by products such as the Sony walkman and early fax machines) and incremental innovations, *"products that provide for new features, benefits or improvements to the existing technologies in the existing markets"*, including items such as health foods and digital automotive control systems.<sup>12</sup> Similarly, Harmancioglu, Droge and Calantone (2009)<sup>13</sup> provide a useful review the existing work on innovation typologies discussing those that fall into a market by technology classification, such as Jones and Johnson (1957)<sup>14</sup> and Chandy and Telliss (1998)<sup>15</sup>, as well as those that view innovation through a product vs. administrative innovation lens, such as Damanpur (1991)<sup>16</sup>, as a change in core concepts vs. a change in linkages with components, Henderson and Clark (2000)<sup>17</sup>, or in terms of uncertainty for the firm - with platform innovations being highly uncertain and derivative projects being more certain (Tatikoina, 1999)<sup>18</sup>.

Another recent typology is that by Francis and Bessant (2005), who categorise innovation type into four categories, including product (or service) innovation in which *"firms find ways to provide superior functionality or price and then signal this to the market"* and process innovation, where firms find ways of optimising processes for high performance. They then go on to present position innovation as a marketing driven role for innovation, *"exploiting new customer bases and markets and finding new ways of offering or introducing the innovation to potential customers"* and paradigm innovations, *"whereby organisations attempt to re-frame products, causing significant shifts in consumer or market perceptions."*<sup>19</sup>

Further recent work has aimed at reducing the number of dimensions through which innovation is discussed and to clarify the plethora of models, frameworks, classifications and definitions through which innovation is examined (for example, Linton, 2009<sup>20</sup> and Rowley, Baregheh and Sambrook, 2011<sup>21</sup>). In Rowley et al.'s view, the many models and frameworks which exist in the literature make it difficult to understand the different definitions used by researchers, as well as the relationships between the proposed types of innovations. Rowley et al. build a framework utilising Francis and Bessant's model of innovation stressing that the position and paradigm innovations are the most novel and interesting types, in that they do not wholly assume that the consequent product (in its broadest sense) is altered substantially in its design or functionality. This gives these types a commonality with the research being undertaken on symbolic innovation and innovation through product meaning, which makes the model an interesting one to use to discuss the nature of innovation through changing symbolic meaning.

Our paper builds on this suggestion by using examples to show how Francis and Bessant's product, process, paradigm and position innovations are as applicable to explaining innovation through meaning as they are in explaining innovation through functionality and/or design. Using data collected from an ongoing research programme we depart from previous work in examining how firms use science based research and development to innovate meaning. We focus our investigations on showing that while R&D remains an essential component of innovation, it is through the application of science that innovation resulting from changing meanings can be constructed and supported without substantial alteration to the product itself. Additionally, we show that unlike fashion based changes of meaning (such as the wire-rimmed eye glass example discussed above), it is the firms themselves that are directing the change of product

meaning by leveraging their knowledge of both the product and the social context in which the product exists.

### **3 Research Questions**

Is it innovation when the product or process stays the same but our understanding of it, through the application of science, is changed? Is such ‘innovation in meaning’ a new approach compared with previous work on innovation in meaning in social contexts, such as that derived through fashion, and, if so, how does it augment our understanding of innovation and innovation typologies? What are the implications for innovation management of purposefully attempting to innovate in meaning?

### **4 Research Methods**

The data for this project were derived from interviews with managers in a diverse sample of food & beverage and biotechnology companies in New Zealand, as well as secondary data sources such as company websites, media campaigns and news items. Multiple interviews, by a team of researchers with varying organisational perspectives, were undertaken with the Chief Executive and different functional managers during 2009-2010. In each organization, these interviews addressed the full range of current business activities, allowing both product and process aspects to be examined as well as other functional and contextual factors to be better understood. All interviews were digitally recorded and fully transcribed, varying in length from 30-90 minutes. The data were then analysed for instances of change in meaning in order to elucidate the innovation strategies behind such conceptual shifts in product/ process understanding. Instances of change were followed up in subsequent interviews with other managers in these companies by members of the research team. The results were assessed using Francis and Bessant’s innovation typology to examine its usefulness in explaining innovation in meaning through the application of science.

### **5 Applying the Typology to Innovation in Meaning**

In this section, we present a range of examples to illustrate how innovations in meaning can overlap with the Francis and Bessant innovation typology, which would more typically be highlighted through examples of market or technological discontinuities.

#### *Manuka Honey - A Paradigm change*

*‘New Zealand manuka honey, expensive food but very affordable medicine’ –  
-CEO F&B I*

A surprising number of organisations in our sample of firms had applied R&D in order to change the meaning of their products or processes and thereby add value to them. Our first example is of a paradigm change undertaken by a food company that was orienting

their research and development away from the value of manuka honey as a food and toward useful applications in both medicine;

*“We are world leaders in the application of Manuka honey for the healing of wounds, and we have got an amazing track record of clinical evidence supporting this, as well as FDA approved medical devices available in the world today.”*

- CEO F&B 1

and beauty and healthcare;

*“We also apply that technology to high end beauty and skin care products. You can see the value there, that’s a \$165-\$250 equivalent of a 250gm pottle of honey, value has been added not only through branding but through innovation and technology.”*

- CEO F&B 1

This form of innovation is an example of Francis and Bessant’s paradigm innovation. In one sense, the new products exemplify the opening up of completely new markets for manuka honey (positional innovation), but more than that, thanks to the intensive scientific research and development – which underpins its development – the paradigm within which this company views Manuka honey has shifted away from being a food-based product to being a product that has applications in both the medical and health and beauty sectors, enabling the company to gain added value from the base manuka honey product. A key part of this innovation rested on generating better scientific understanding and measurement of the Manuka honey initially and subsequently identifying value-added uses associated with these differentiating properties.

*From simple to complex - Product changes*

*“We are fine tuning our products, but the fine tuning is not substantive”*

- CEO Bio 1

For another company, its policy of continuously researching and developing product offerings enabled it to transform the meaning behind one product which had become inferior in the market place;

*“We have a product, chondroitin sulphate, it might be 25% [purity], but the Chinese came on and they’re selling 95% purity. What we didn’t realise at the time was that there’s another 40-45% collagen and all these other incremental goodies in [our product] such as morphogenetic protein growth factors and the like. So instead of saying our chondroitin sulphate, which as a percentage basis isn’t very good, we’ve changed it to a chondroitin complex.”*

- CEO Bio 1

Again, as a result of examining their product in greater detail and being aware of competitive offerings and market potential, the company altered the chondroitin product it offered, changing its meaning from a simple and possibly low quality compound to a complex one without changing the product at all. For this company, continuously researching and developing existing product offerings is part of everyday business, and by taking this approach the company is able to leverage off outside research impacting upon its product offerings which at times has led to potential advantage. For example, the CEO recently became aware of university based research which showed that the rapid absorption of key calcium nutrients (taken by consumers in the form of supplements) could cause spikes in calcium levels, and as a consequence, heighten the risk of heart disease. Through further research, the company aims to improve its existing supplements by further developing their slower controlled release of key nutrients without causing spikes, while still maintaining the effectiveness of the existing product in delivering the nutrients.

These examples show that the science based research and development that this company invests in allows it to both change the meaning of its existing product offerings (from simple to a complex compound) and to incrementally innovate existing offerings (offer what is essentially a safer calcium supplement) to its existing consumers in response to environmental pressures. In using this product innovation approach the company has successfully grown their existing markets in a very competitive environment.

#### *Promoting benefits – Positional Innovation*

An example of positional innovation comes from a manufacturer of prepared meat products, who recognised both the value and dangers of promoting gluten free products to a specific segment of consumers. For this meat product manufacturer, the careful use of a gluten-free label was applied with respect to positioning some products to consumers for whom gluten free would be perceived as a benefit, but without jeopardising the broader segment to whom the product is promoted;

*“others think there’s something wrong with them when they see it’s gluten-free. They think it’s not the normal sausage any more. So what we actually do, we almost make everything gluten-free today but we only put a name on half a dozen of them until we think, alright, we can start shifting this a bit.”*

*- CEO F&B 2*

The product was essentially unchanged, as any gluten containing ingredients tended to be a small proportion of some of the product line and easily replaceable, but with the added label to the gluten free products their meaning shifted to be distinctive and more healthy for some customers, but potentially undesirable for others. The manufacturer recognised the dual meanings that consumers may apply to the positioning of a product as gluten free, and therefore developed a strategy to both position his product to a new segment whom would perceive the benefits of this approach, and at the same time protect the existing markets of consumers, who would perceive gluten free as undesirable.

## *From Waste to Raw Materials – Process change*

*We try not to use the word ‘waste, now we say RRM – remaining raw materials. Again that is part of our culture change to suggest a positive ‘everything has value’ rather than the negative that comes from the word ‘waste’.*

*--CEO F&B 3*

By applying scientific research and development to find new uses for every part of their raw material, the paradigm within which waste is viewed in some organisations is being altered so that the meaning of waste is now re-considered as potential raw materials. A second organisation also applies their research and development to re-defining waste in an effort to create value added products out of remaining raw material;

*“We are using [only] a third, 40% of the raw product, so we started doing some tests on the composition of the left overs, and we find that they are very high in NPK’s, nitrogen, potassium and phosphates and so now we are looking at it as creating fertilizer.”*

*--CEO F&B 4*

In this sense the change in meaning is related to the production processes involved in creating the organisation’s existing product offerings rather than to the products themselves, but by redefining waste, the organisations are able to use process changes to open new avenues for creating additional added value.

## **6 Discussion**

As our results show, typologies which discuss organisational innovation strategies such as Francis and Bessant’s (2005) model can be equally useful in explaining how organisations innovate through changing meanings, even though under some schema it would not be apparent that innovation had occurred. Our findings show that organisations can innovate products, processes, positions and paradigms without essentially changing their product offerings, and in certain sectors they appear to do so through the application of science led research and development within specific socio-cultural contexts. These contexts include the use of external scientific and research reports (such as the calcium supplements research example) and awareness of broad stakeholder concerns, such as concerns about the disposal of waste products, the belief that the consumption of food is about more than satisfying hunger and that the health properties of food are important, and the desire for a return to naturally based products, such as the use of Manuka honey in the health, beauty and medical sectors.

As was shown in the design based innovation literature, our findings suggest that innovation through changing meaning is driven by organisational attempts to gain or maintain competitive advantage in a chosen market space. Some of our company CEO’s and senior managers were continuously using their knowledge of the changing societal contexts within which their products are offered to find potential ways to innovate their products through changing meaning. Additional examples of this approach are from two individual chocolate manufacturers. In a social context, chocolate is not generally perceived as a health food, however, these two companies have actively examined the



health properties of chocolate uncovered in scientific research, and are working to innovate the meaning of chocolate to leverage these potential health benefits, firstly in the association of dark chocolate combined with supposed 'superfoods';

*'There's so much research around dark chocolate being good for you .... there's a huge potential for us just on the West Coast of America through developing products with healthier properties associated with them. So we're looking at doing things with Zespri Gold kiwifruit, Manuka honey, blueberries.'*  
- CEO F&B 5

Secondly, in building a unique combination of gourmet chocolate production and chocolate therapy. This second company promotes not only the fact that chocolate contains the chemical, Phenylethylamine, a contributor to psychological happiness, but now uses chocolate manufactured with a production technique which preserves the nutritional and anti-oxidant values of their product;

*So now we are working with a cold pressed process. It's a cold pressed made chocolate and it is incredibly rich with all of its [original] nutritional value, and high, high, high, antioxidant values. The flavonoids, [are] all totally in-tact.*  
- CEO F&B 6

These elements are then actively publicised in the company's promotional material including their website, which lists the health benefits of chocolate as including;

*Chocolate is a health food, [there are] more antioxidants in chocolate than in fruit and vegetables, it contains compounds that promote heart health, it is flavonoid-rich, similar to green tea, red wine and olive oil. Fat in chocolate contains stearic acid, oleic acid which decrease platelet activity, and chocolate lowers cholesterol*  
- F&B 6 Company website

Both of these companies are actively using scientific research to change the meaning of chocolate as health providing and in doing so are attempting to change the paradigm within which their consumers view chocolate products.

A final example is of the CEO of a salmon fishery who actively researched scientific evidence to help change his remaining raw materials into a marketable product (omega 3).

*"We're a founding member of the Omega Foundation Australia. They do sort of 'pseudo research' in the sense that they will study all the articles that come out - and there are twenty a day on Omega 3 - and we see if we can gain advantage from these things. We've got an investment which is extracting Omega 3 oil from remaining raw material of ours. It's naturally occurring Omega 3 oil from [our brand of] Salmon rather than just a fish oil with Omega 3 in it."*  
- CEO F&B 3

This example shows not only a paradigm change in the meaning of waste products to remaining raw materials, but also the desire of the company to continuously improve its Omega 3 offerings in line with the latest scientific evidence, to be a leading edge supplier of omega 3 products.

Of further interest is how this innovation through change in meaning impacts upon the broader stakeholders of a company wishing to pursue such an approach. For many stakeholder groups, recognising and adapting to the changing meanings of products may not be a simple process. If as Fox states, it is the collective social meanings within communities of knowledge that enhance the rate or depth of adoption of a new innovation, there is the implication that it is only when new or changed meanings are collectively understood and accepted that they will be recognised, and this may require the development of new shared meanings which refer back to the existing symbols and structures used by established communities of interest. Groups such as employees, shareholders, customers and wider interest groups will need to re-frame their understanding of a product's innovative meaning, and this may not be easily accomplished. It is possible to argue that the more radical the change the easier this could be if established symbols and structures exist from which the innovating organisation can leverage. For example, with paradigm changes such as the move of Manuka honey from being a food to becoming a component of the wound care and beauty industries, the development of a shared understanding of new meanings could be achieved by the innovating organisation adopting the symbols and structures used in these two sectors. This may then assist employees, shareholders and customers to develop new understandings of the manuka honey product. Employees could train and up-skill to meet new operating and manufacturing standards based on those existing in the two sectors, shareholders could assess published results of companies in wound care and beauty to begin the process of understanding the implications of the re-framing on their investments, and customers and users can assess the benefits of the products being offered by comparing them with those currently available in the new sectors. For less radical changes such as companies re-framing an existing range of confectionary to one that contains health properties, for example, dark chocolate combined with super fruits, or chocolate as a health product, the shared symbols and structures of the health food industry may not be so easily transferable to the confectionary range, slowing down stakeholders recognition and adoption of the new meanings. Confounders to the adoption of the new meanings could include the wide cultural understanding of chocolate as junk food, confectionary, or a treat, making the adoption of symbols and structures associated with health food difficult to achieve. The cultural understanding associated with chocolate may make the new meanings difficult to convey to sufficiently broad stakeholder groups including consumer segments, without extensive and expensive work in developing the symbols and structures required to convey the meaning of chocolate as providing health properties, which will slow the adoption of the new meaning of the chocolate product. A study of the impacts on the various stakeholders of the organisations who pursue a strategy of innovation through changing meaning may help to clarify some of these issues.

## **7 Conclusion**

This paper has argued that significant innovations can occur in product meaning even when the product offered by a company essentially remains unchanged. Through our examples we have argued that when shared symbols and structures are able to be leveraged, paradigm, process and positional innovation can change the way in which companies, stakeholders and customers understand existing products, opening up potential sources of competitive advantage through significant market extension, e.g. honey as wound care and beauty products, and re-defining waste as remaining raw

materials. Where these shared symbols and structures aren't as readily available and existing products are fine tuned in response to environmental concerns (for example, the chondroitin complex and calcium supplement), the same potential for market extension is not as evident, at least not for our companies in the examples given. Additionally, we would suggest that based on our findings, most radical or really new innovation requires more than a re-defining of understandings and meanings associated with a product, but also requires an element of product innovation itself.

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