

## **INTEGRATION OF CONSUMER AND MANAGEMENT IN NPD**

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### **Introduction**

Consumers now expect continual change and improvement in their lives and in the products and services they use. This can be at a brand level through symbolism, communications, graphics, pack design, etc., but inevitably change must eventually take on a physical tangible form to maintain credibility. Otherwise there is product parity and brands depend solely upon psychological factors and marketing techniques. Whilst 'image' is of unquestionable importance, the input of product innovation is essential to competitive advantage.

There is then a strong and growing pressure on manufacturers and their brands to engage in NPD – quality improvement and innovation – to differentiate themselves, to win competitive advantage and to keep up with consumer demands. Failure to maintain or be at the forefront of product innovation in the competitive arena means slow erosion and ultimately extinction.

Current methods and practice for generating NPD ideas and funnelling products to the factory floor are therefore coming under increasing pressure. This paper suggests ways and means to enhance the process of NPD through qualitative research: first, through the systematic use of qualitative research for understanding consumer needs and wants; second, and more important, through specially designed methods for applying this understanding to NPD idea generation with management.

### **Consumer Understanding and NPD**

Until the middle of the 20<sup>th</sup> Century innovation was based upon what manufacturers could and wanted to supply, NPD was then a process of 'hunch', second-guessing, serendipity, pure invention, or technological advance.

The post-war consumer and manufacturing boom, especially in the USA, led to growing competition between rival products. Sheer supply was insufficient to maintain competitive advantage. Hence began the systematic investigation of customers to discover what they wanted and what was most important to them. This direct and relatively straightforward data source was then used to focus NPD efforts, the first steps to a customer led strategy.

However, over time this proved to be over-simplistic in accurately mapping or anticipating increasingly complex consumer wants and needs. It became, given growing demands, incapable of identifying attributes which could differentiate or sufficiently explain how or in what ways consumers desired improvement. In particular the link between physical and emotional gratifications was often lacking.

To explore the depth and multiplicity of modern needs more fully, we have seen the development of new creative qualitative methodologies. Enabling, projective and creative techniques have been introduced to reveal psychological motivations and private or hidden wants. This has provided new layers for NPD and innovation, that go beyond what consumers can specifically ask for, and access their unspoken or latent wants and desires.

As Fig.1 shows, layers of consumer consciousness can be identified which are either public or private, communicable or not, and aware or not. Corresponding to these are different types of interviewing techniques each generating their own output for obtaining a holistic picture of the consumer. As a result, rational, emotional, social and cultural interpretations can be obtained.

**Fig.1: Layers of Consciousness (Cooper, 1995)**

		Layer	Method	Output
PUBLIC	COMMUNICABLE	AWARE	Spontaneous	Simple questioning Immediate, spontaneous. Top of mind needs.
			Reasoned, conventional	Asking Discussing Justifications, explanations. Rational benefits, wants.
			Pre-conscious	Pressing Reminding Detailed elaborations/ introspections.
PRIVATE	NON-COMMUNICABLE	Concealed, personal	Sympathetic probing, empathy. Personal admissions, private wants.	
		Intuitive	Play, drama, non-verbal collage. Symbols, imagination, analogy, latent wants.	
	NON-COMMUNICABLE	NON-AWARE	Unconscious	Projective approaches Repressed attitudes, motives. Hidden needs.

It is not the intent of this paper to discuss in detail qualitative consumer methodologies, as much literature already exists (e.g. Cooper 1995, Goodyear 1998). Our main purpose is to demonstrate how the qualitative approach is now successfully used with management in relation to NPD.

Suffice it to say that research and manufacturers now have at their disposal sophisticated tools in modern qualitative research for understanding customer needs and wants, which are potent inputs into the NPD process and major sources of inspiration. The main issue is how to make fuller use of the knowledge and insights modern qualitative research brings. Commonly cited problems are:

- Researcher 'naivety' of commercial and management issues, leading to unactionable or irrelevant conclusions.
- 'Piecemeal' research, over focused on a particular area, obscuring the big picture or obvious.
- Clients too are often hesitant to draw out the full implications which would position consumer understanding at the centre of the organisation.

The solution is a loosening of the demarcation of responsibility between qualitative research and management, allowing researchers to better understand operational NPD processes, and for management to better experience and empathise with the consumer more fully. In this way, qualitative research can deliver NPD insights in a form that management can use to carry these through the organisation.

## **Integrating Consumer Understanding into NPD**

Working with a number of organisations we have developed a model for the genesis of innovation and NPD, using qualitative research which is specifically designed to stimulate management creativity (Fig.2). It involves three steps:

**Step 1:** Identification of consumer understanding through detailed qualitative studies of the psychological and functional components of consumer needs and wants. The research design is based upon forms of groups, individual interviewing and video observation according to the project objectives. Management participates in the process by attending interviews and experiencing on-site observations.

**Step 2:** These findings are presented to management in terms which are geared to the subsequent NPD process. That is, supplying the right kind of data in the right form to feed these processes. This normally requires an initial extensive presentations and discussions.

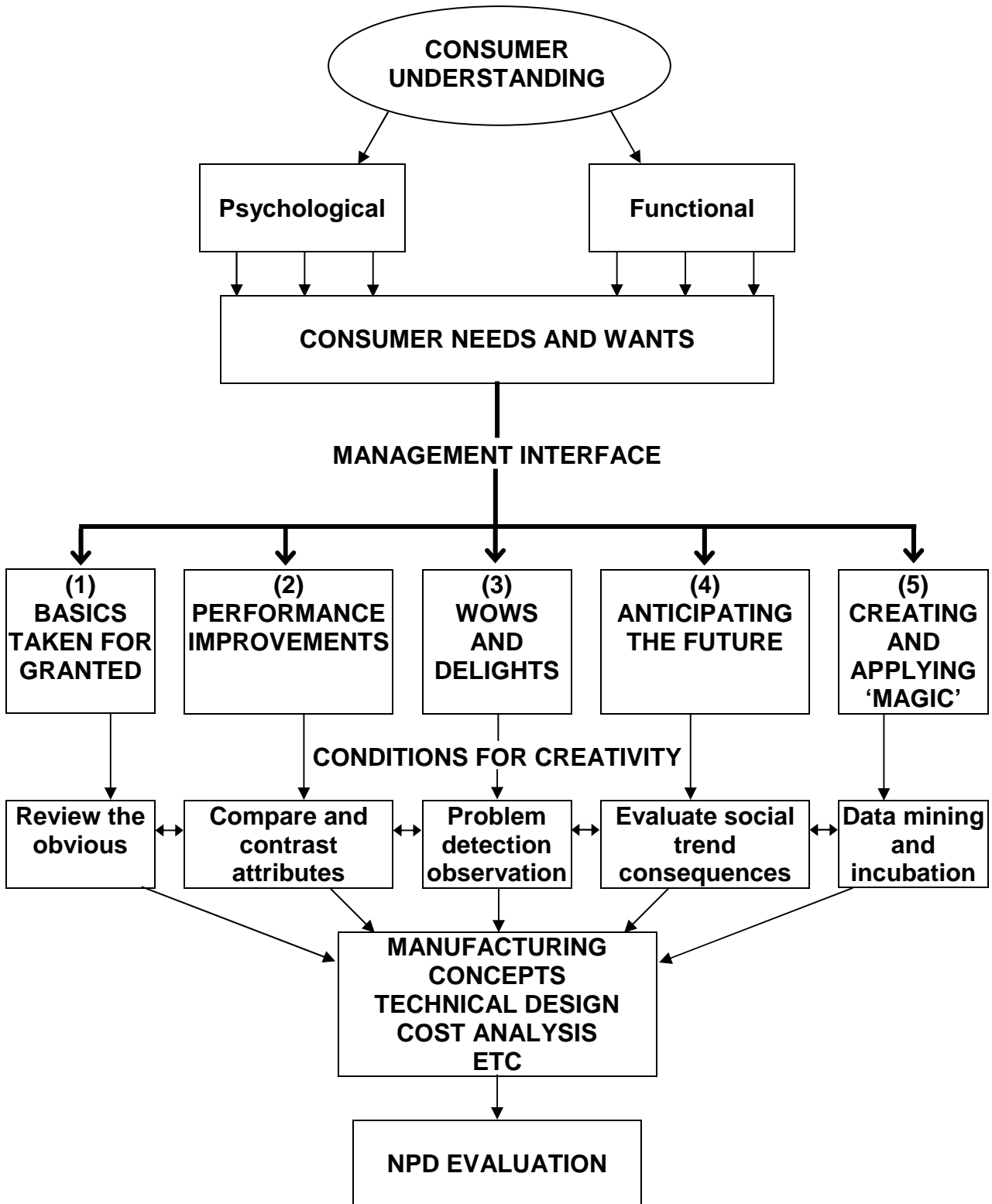
**Step 3:** Management and researchers together then go through a set of creative processes in a series of Think Tanks over several days. There are five aspects of the NPD process to which the qualitative findings, and additional quantitative data, can be specifically applied. These are investigations of:

1. BASICS, TAKEN FOR GRANTED
2. PERFORMANCE IMPROVEMENTS
3. LIKELY WOWS AND DELIGHTS
4. ANTICIPATING THE FUTURE
5. CREATING AND APPLYING 'MAGIC'

In order to optimise the genesis of innovations in these five areas, conditions for creativity are set up, described later. For each of the five we show the specific data sources and creative processes for stimulating them, although we should add that there is natural interaction and fertilisation between them during the Think Tanks, as Fig.2 shows. The output is manufacturing concepts, technical design, cost analyses, etc., which are then subject to NPD evaluation using market research analyses, forecasts of demand, etc.

Aside from the commercial benefits, we should add that this process is also satisfying because it takes research deeply into the organisation. In this respect it helps achieve what ESOMAR and other authorities have recommended for the market research industry as a whole, i.e. to shift from sheer data or information supply to consumer understanding and innovation.

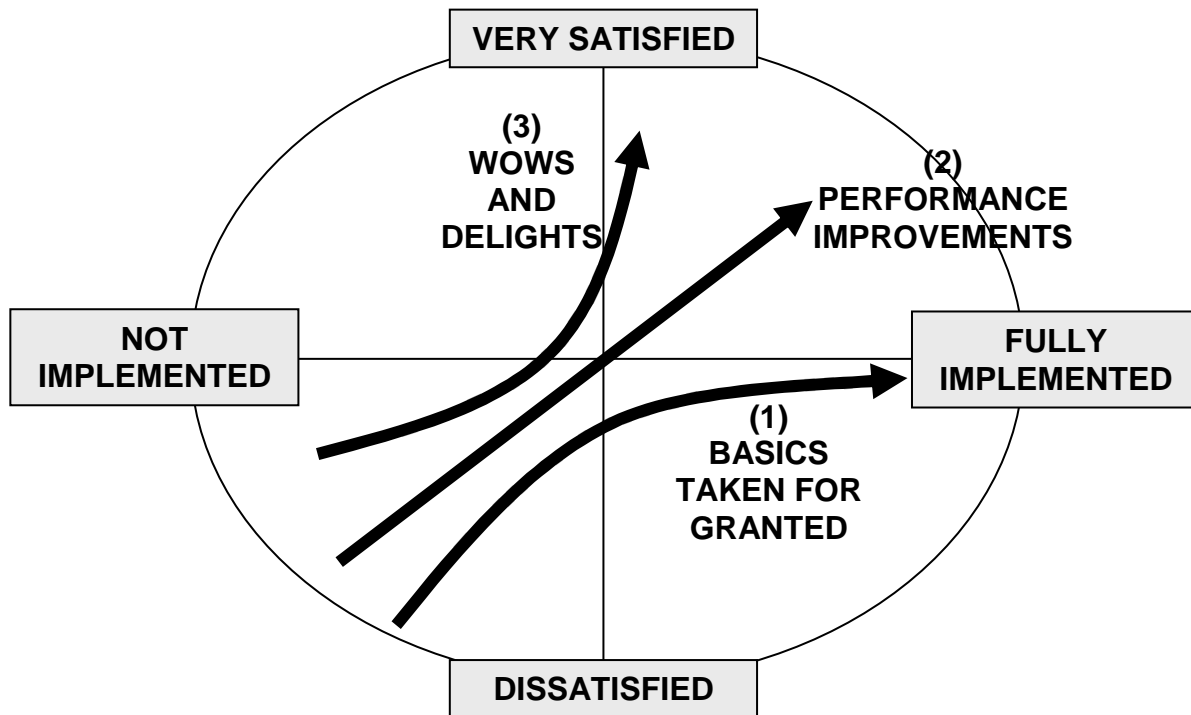
**Fig.2: Genesis of Innovation: Integration of Qualitative Research into the NPD Process**



## The Five Creative Processes

Kano (1984) provides us with a simple but powerful illustration of the first three of these areas (Fig.3). Kano's model describes product attributes and innovations in terms of levels of customer satisfaction and relative levels of implementation in the market by competitors. It also recognises the pressures of time and change as a dynamic running through the model, innovations fall from top left to bottom right.

**Fig.3: The Kano Model**



Kano identifies three key areas for attention in NPD: (1) Examining the basics or taken for granted aspects of products; (2) Looking for performance improvements; and (3) Developing 'wows' or delights. To these we have added (4) Anticipating the future; and (5) Creating and applying 'magic'.

- (1) **Basics.** These are the fundamental, 'must haves' or taken for granted features of products. They are part of the fabric of the product, at least in the consumer mind, and employed to a high degree by all competitors in the market place. Examples are the indicator lights on cars (or even four wheels!), or the inclusion nowadays of a plug on an electrical appliance.

At first sight they offer few opportunities for NPD, and Kano's model points out that even exceptional delivery of these attributes generates little enthusiasm from customers, indeed they are likely to go unnoticed. However, failure to properly supply basics leads to rejection, as does trading-off their efficiency to enhance other innovations. For example, a car may have impressive design features but compromise performance and fuel efficiency through the extra weight.

Research too can miss these factors, because consumers dismiss them as unimportant and unexciting or simply because they remain unspoken, assuming that 'everybody knows' these are important.

In NPD 'basic' factors can be powerful if simply brought back to attention, re-exposed and the obvious made plain. From this we are reminded of their importance and given the opportunity to re-evaluate and challenge their function and purpose, which can be a surprisingly rich area. Reinvention or even disposal may be possible through modern technology, leading to cost savings or enhanced customer satisfaction. Examples are the reinvention of the aircraft control column as a joystick, or the addition of ring pulls to canned foods reinventing opening methods. In this way, out of the seemingly obvious comes competitive advantage.

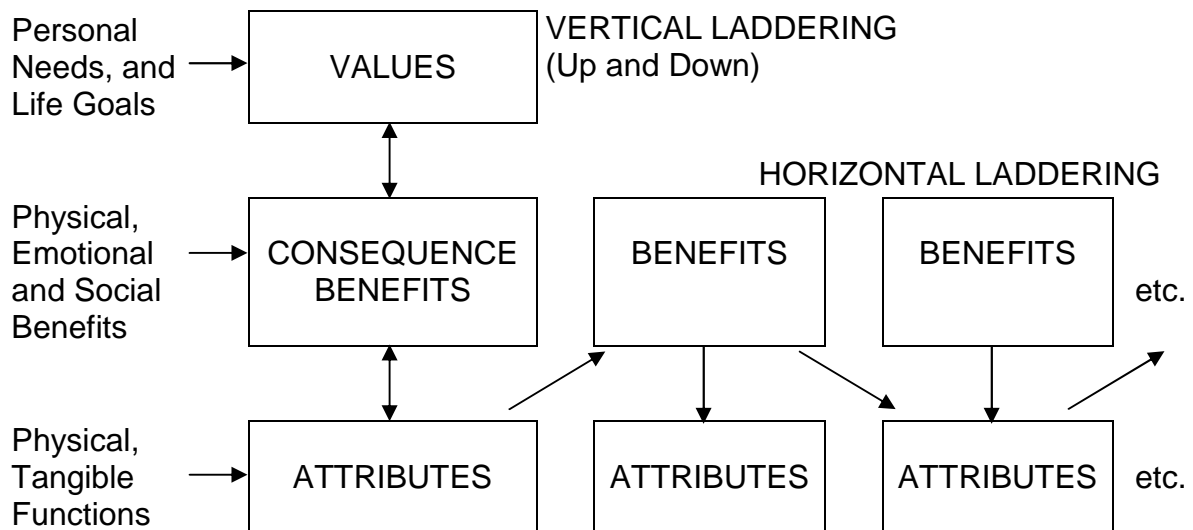
Qualitative methods for exploring the 'basics' rely upon the inspection of 'everyday life' behaviour. This can be achieved through ethnographic observation of behaviour and simple questioning. However, regardless of method, what is important is for management and researcher to adopt a naive and curious attitude to the obvious, with a view to questioning and deconstructing 'taken for granted' assumptions.

- (2) **Performance Improvements.** Improving functional performance attributes are common battlegrounds in any product category. They satisfy consumers through continued optimisation and improvement. Examples of performance innovations/attributes might be washing powder that washes whiter, or is more sensitive/gentle than the competition, tastier biscuit, or cheaper with the same quality as others, and so on.

They are then key points of overt differentiation where one brand performs better than another. Indeed long-term brand leaders commonly rate highly on performance factors, which is often a 'halo' effect. In research terms these performance factors are often 'top of mind' with consumers and hence relatively simple to access and understand via questioning, projection in the case of more emotional wants.

NPD applications for this kind of data are also relatively familiar, involving competitor analysis, SWOT (Strengths, Weaknesses, Opportunities, Threats), and trade-off resolution. It is basically an evolutionary and constructive process, building and enhancing what already exists, and therefore lends itself well to systematic approaches.

An efficient and systematic approach for uncovering the necessary detail and linkages to give management new angles on performance attributes can be found in adaptations of consumer laddering (Fig.4). Consumer laddering seeks to establish a means-end motivational chain through systematic and repetitive 'pressing' and probing of consumers. It is often employed to establish linkages between tangible benefits and consumer value systems but can also, when applied both vertically downwards and horizontally, be used to explore and brainstorm product demands.

**Fig.4: Vertical and Lateral Laddering**

The starting point of Laddering is to generate all the key benefits that are important in choosing between two products. These base benefits can then in turn be laddered.

Vertically, establishing the next order benefit from that attribute, then the next and so on until an intangible life value is reached via simple repetitive questioning – “Why is that important to you” or variations. This is useful in establishing the more emotional and social factors that makeup commonly demanded attributes. For example, we might learn that consumers want ABS brakes on cars because they are safer – protects my life – I live longer – care for my family longer and better, etc. Laddering can then be vertically downwards to establish what other product attributes would satisfy such consumer values.

Horizontally, seeking to establish benefits and attributes with near or related characteristics to the original, and so on. Management effectively brainstorms product properties, again via simple probes – “How else achieve that?”, “What is the ideal?”, “What gives it that quality?”, etc. This will generate a large volume of overt or latent physical wants in a given broad area. For example, we might learn that ‘whiteness’ in laundry relates to brightness, cleanliness, scrubbing, effort, bleach, damage, etc. Again this gives new angles on how to deliver performance.

- (3) **Wows and Delights** are defined by Kano as new and unique features that are unexpected and surprise consumers. These can be relatively modest or dramatic, seemingly inspired breakthrough innovations that are newsworthy and have the capacity to change markets, and leapfrog brand leaders.

They are rarely overtly demanded by consumers as they have no prior knowledge of their existence. Hence failure to supply a ‘wow’ will not reduce satisfaction with a product unless others get there first. For these reasons much NPD effort is aimed at uncovering them. Nonetheless, innovations of this kind are far and few between and most often based upon ‘accidental’ discovery.

Specific methods for drawing out ‘wows’ are:

- Problem Detection in the product area:
  - Frustrations/Confusions
  - Fears/Anxieties
  - Wasted time or time consuming activities
  - Wrongly performed acts or misunderstandings
  - Dangerous or potentially dangerous acts
  - Modifying, adding to or supplementing with other products
  - Unusual acts (in comparison with other observations)

Developing ‘wows’ in the NPD process then becomes a matter of solving problems or improving the situation through innovation. This is best derived from what De Bono describes as lateral thinking or benchmarking. Well-known example applications of this are pre-ripped, shrinkable and faded jeans in the 80’s which were developed after Levis noticed kids were modifying the products they sold. Or Reebok who noticed consumers modified running shoes for aerobics to add cushioning and support. They launched a range of special aerobic shoes which now have a multi-billion dollar turnover.

- Ethnographic and observational methods help to feed ‘wows’, by using ‘fly on the wall’ observation of consumers and their behaviour. They can be a critically important source of data by revealing the unspoken, unconscious factors and subtle detail that consumers themselves cannot express.

For example, a consumer might typically explain how they feed their cat as going to the cupboard, opening a can, spooning into a bowl and then placing on the floor. This is a reasonable description. However it does not reveal the complex emotional and physical problems and intentions that the task really involves. It is within these hidden or unexpressed details that new and untapped wants, needs, and ‘wows’ can be identified.

- Protocol Analysis, examining with consumers and management video play back frame by frame, task by task, of consumer behaviour. This allows the researcher and management to probe in detail the meaning and feeling of each individual step and obtain reasons for a particular action. By this means consumers can verbalise otherwise unconscious or ritualised needs, discover dissatisfactions in their own relationship and behaviour with a product.

- (4) **Anticipating the Future**. Anticipating Change is the process of predicting likely futures, how consumers will think, feel and be doing in the years to come. From this we can begin to deduce wants that will be demanded, and hence pre-empt consumer needs.

This pre-emption can be extremely powerful. This is unlike most consumer-driven innovation which is based upon what people already want. Anticipatory innovation can then often have a longer-term impact upon a market, more sustainable competitive advantage.



The raw materials of anticipating change are trends:

- Demographic Change, projections of ageing, birth rates, incomes, etc. This clearly is best understood on a statistical basis, although qualitative research can help in interpreting the likely cause and effects.
- Physical Change, normally external to the consumers, such as environmental factors or technological change. Again, the role of qualitative research is not so much in defining these changes but in predicting how this will impact.
- Social and Cultural Change, looking at the consequences of change for the product area. We can source data from many sources:
  - Expert Opinion, professional or governmental monitors whose interest lies in studying and creating change.
  - Media analysis, which will often have its finger on the pulse, reflected in the information content and style which people wish to know and read.
  - Consumers themselves. The adoption curve illustrates that some consumers are quicker to pick up on new ideas and values than others. By probing change with this 'leading edge' we can therefore begin to understand how mainstream audiences may behave in the future.
  - Precedence, in global markets we can understand how similar markets have behaved in the past and therefore begin to understand how others might behave.

Employing this understanding involves translating social values into more tangible benefits and attributes. For example, if we detect consumers are beginning to feel insecure and perhaps beginning to look nostalgically to the past we can consider more traditional ingredients; growing individualism prompts ideas for personal service arrangement; the importance of time invites ideas for saving or savouring time, and so on. The method is simple and highly productive.

- (5) **Creating and Applying 'Magic'**. Here we are referring to the wild and unpredictable discoveries and revelations that have a fundamental impact upon society and relate to the creation of an entirely new stream of opportunities. Examples might be the discovery of electricity, penicillin, or more modestly 3M's 'Post-it' Notes. They go beyond 'wows' and 'delights'.

These 'magical' revelations are rare but can be arrived at by several different means or processes. We also see these in the conditions of creativity (see next section):

- By provocative, creative deconstruction and reframing of existing concepts. This is also akin to De Bono's lateral thinking but goes further to generate 'wild', off the wall ideas and new ways of thinking. Research and consumer understanding provides the starting point through analyses of behaviour and the use of metaphors of what works elsewhere (synectics).
- As Wallas in his work on the nature of creativity points out, creativity develops from through thorough and rigorous preparation or experimentation, through to unconscious incubation before the idea materialises, often by some small observation or trivial fact. Changing the pace, or literally 'sleeping on it', can provoke management to arrive at such powerful ideas.

- By what can only be described as chance or serendipity, often accidental discoveries, the mistakes or by-products of different lines of thought or exploration. These are chanced upon well in advance of their commercial exploitation or even of their need being identified. Hence electricity was once an interesting natural phenomena and 3M's glue a useless chemical that did not stick properly.

Consumer understanding helps in identifying the needs that such ideas can fulfil. A full and rich in-depth knowledge of the consumer on the part of NPD and research scientists, and an awareness of these chance discoveries can help transform them into tomorrow's major discoveries.

### **Conditions for Creativity**

The conditions for creativity which operate across all five processes are sensitivity to the consumer and openness to new ideas. The psychological literature on creativity points out learnings which unlock management and consumer creativity – novel combinations of ideas which have practical and social value, or which stimulate others. These are readily applied to the consumer ad management innovation process.

These psychological studies show that creativity involves:

- Originality – i.e. producing responses that are novel or are at least statistically infrequent.
- Adaptiveness – it must adapt to reality, i.e. it must solve a problem, fit a situation, or accomplish a recognisable goal.
- Realisation – elaborating and developing the idea to the full extent of the original idea.

Creativity is clearly a vital component in the nature of innovation and in the NPD process. It is clear that some people are naturally creative and others are not, but it is possible to create the right environment for less creative people to get in touch with their creativity.

So called 'non-creative' people have been found to exhibit the following traits:

- Believing in the logic and correctness of their existing view of the world.
- Unwilling, or unable, to make rapid changes in orientation.
- Clinging firmly to what they believe is right.
- Realising that new ideas mean more work!

These resistances to change and innovation can be part of the corporate culture too. Change involves stress, hence management requires 'champions' for change, careful management of transition, and of the internal political dynamics of change (Nadler, 1989). Where corporate culture is not disposed to change, the innovative processes described will not germinate. Hence the attached projective cartoon – "Can't you see I've got a battle to fight!"



To return to our theme, creative people, on the other hand tend to exhibit these traits:

- Evaluative Ability – the ability to see problems in the first place, i.e. a judgement that things are not all right, and that goals have not been reached.
- Associational Fluency – the ability to associate elements of a problem together in unusual ways.
- Spontaneous Flexibility – the ability to produce a great variety of ideas with freedom from inertia.

Creative individuals also tend to be 'divergent' thinkers. However, creativity is not solely dependent upon the divergent process as there is also a role for 'convergent' thinking in identifying a single, focussed solution to a problem. The important point is that all should be willing to be creative and to participate.

As we noted earlier, there are distinct stages in the creative process which can be used in NPD. Wallas as early as 1926 recognised that there are four main stages in arriving at a new idea:

- 1) The Preparation stage is where the problem is defined and all the facts concerning the problem are then brought together.
- 2) In the Incubation stage there is no conscious thinking about the problem, but it is still being worked on at a sub-conscious level.
- 3) The Illumination stage is when the idea 'suddenly' comes to the creative thinker following the Incubation stage.
- 4) Finally the Verification stage is where the creative idea is verified for its practicality.

The use of metaphors, analogies, and similes have been found to be helpful in encouraging illumination. By scanning a completely different product category or area, it becomes possible to apply solutions that work elsewhere to the product area under investigation. For example, in looking at shopping behaviour we used the analogy with learning a musical instrument, and the results showed that learning to cope with shopping were similar to those of a skilled musician in handling harmonies. In the interior design of cars useful analogies are drawn with rooms in the house. This type of work draws on the principles of 'synectics' (Gordon, 1961) which were developed to solve a variety of technological problems by 'making the strange familiar and the familiar strange'.

Having examined aspects of the creative process, we can now look at how to stimulate it in management. Basically there are two ways:

- (1) Selection. By selecting people, based upon their creativity, we can clearly optimise the creative output. Those management participants who make the best contribution are:
  - Able to integrate diverse stimuli.
  - High in the ability to think of many different words quickly.
  - More interested in art, music, literature and social service activities.
  - More enthusiastic about complex rather than simple stimuli
  - More effective in performance in different kinds of situations.
  - High in energy and enthusiasm
  - Dominant and assertive
  - Impulsive
  - Less susceptible to social influence in making decision.
  
- (2) Creating the optimum environment. Individually people are often less inhibited and can be more 'creative' than in a group. However, we are here interested in how to optimise creativity within an organisation. The following 'rules' apply:
  - (i) The problem must firstly be clearly defined.
  - (ii) Group members may feel inhibited because they feel less 'competent' than other participants. Everyone needs to be made to feel equal, and that their particular view of the problem is just as important as anyone else's.
  - (iii) The less creative can be encouraged to feel that they are more creative than they thought. The simple instruction, 'adopt the role of being creative' markedly improves output.
  - (iv) Humour and playfulness are important as it helps creativity and the bonding process.
  - (v) Role-playing, brainstorming and projective techniques play important parts in breaking down barriers.
  - (vi) As noted above, allowing 'incubation' encourages individuals to reach the 'illumination' phase.
  - (vii) An atmosphere where everyone accepts and builds upon the ideas generated by others allows more risk-taking with ideas.

Finally, De Bono's work on 'lateral thinking' can be used to stimulate creativity generally, and can be especially relevant to generating consumer 'wows' or delights. Lateral thinking is concerned about developing ways we look at things beyond logic and beyond sheer chance, by creating new patterns of perception. Perception is always a matter of seeing problems and therefore what we need to do is to jolt or provoke our normal patterns into something new.

To quote one of De Bono's own examples, suppose we are looking for a new idea for a cigarette product. We use one of the more provocative lateral thinking techniques and we bring in a random word as provocation. The word can be picked from a dictionary with a table of random numbers so that no unconscious selection takes place. Does this mean that any word whatsoever may be used as a provocation with any problem whatsoever? It does. There is no connection at all between that random word and the problem. The word is 'soap', and from this comes the idea of freshness, and of spring, and from this comes the idea of freshness, and of spring, and of putting flower seeds in the butt of cigarettes so that when the butts are thrown away a flower will grow from each one and beautify the surroundings instead of polluting them.

Lateral thinking involves the use of random juxtapositions and provocative stepping stones, with the objectives of changing ongoing perceptions. Occasionally we have found that changed perceptions give a solution or a valuable new idea, although more often they provide a starting point which has to be developed in the usual logical manner, and become logical or rational in hindsight.

## **Conclusions**

Given the growing pressures for innovation, consumer understanding alone is not likely to be enough in the future, no matter how detailed, and sophisticated the techniques and analysis. To maximise the NPD through-put the qualitative researcher must go beyond to understanding the processes by which consumer understanding is applied to generate physical, tangible and actionable ideas.

The five innovation applications outlined in this paper provide a classification which the researcher, by understanding how their data can be applied, can begin to design systematic approaches to provide actionable and focussed learning. In this manner the NPD process can become more reliable and research a more potent resource, supported by the general conditions of creativity outlined.

Qualitative researchers can therefore go much further than communication of results, entering into a closer relationship with clients from marketing through the organisation to the factory floor. In this way appropriately focussed consumer understanding can be spread through the organisation enhancing empathy with customers and hence focusing management and technical resources upon changing customer demands. The responsibility for achieving this goal rests not only upon the researcher but also with research management in encouraging access and close relationships with their consumers.

These new roles have powerful implications for the future. As Susan Fournier (et al) recently put it in the Harvard Business Review:

*“If researchers were truly the consumer specialists we intend them to be ... we would no longer think of them as tacticians, reporters, or facilitators of focus groups. Instead they would be strategic specialists with a mandate to develop and communicate throughout the company empathic understanding of target consumers. The researcher would serve as the king pin of the entire relationship – marketing function ... in effect, the foundation of the entire marketing discipline.”*

In short, to integrate research fully into the organisation. This can only be beneficial to customers, manufacturers, and to qualitative researchers.

## **Bibliography**

- Kano, Seraku, Takahashi, Tsuji (1984) – Attractive quality and must-be quality – Nippon QC Gakka: 12<sup>th</sup> Annual Meeting
- Fournier, S., Dobscha, S., and Mick, D., Thinking about relationship marketing, Harvard Business Review J/F,98
- De Bono, E., Lateral Thinking, London (1977)
- Goodyear, M., Qualitative Research, in ESOMAR Handbook of Market and Opinion Research, ed. McDonald, D. and Vangelder, P., ESOMAR (1998)
- Nadler, D.A., Concepts for the Management of Organisation Change, in The Management of Organisations, ed. Tushman, M.L., O’Reilly, C., and Nadler, D.A., Harper & Row, New York (1989)
- Gordon, William, Synectics, Harper & Row, New York (1961)
- Cooper, P., Patterson, S., - The Future of Qualitative Research, ESOMAR, Amsterdam, 1995