

Supplier Led New Product Development Process Improvement in the UK Fast Moving Consumer Goods Industry

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Little has been written about new product and packaging development processes within the fast moving consumer goods (FMCG) industry. While often taking on the status of apocryphical folklore, branded FMCG product development failure rates as high as 90%–95% have appeared in the popular and consultancy press. However, no rigorous study has addressed the commercial success/failure rates of private-label products in this context; an area in which the leading UK supermarket (grocery) retailers are acknowledged to excel.

Using a case study-based approach that involved ASDA and six of its leading private label suppliers, this paper details empirical findings of the operational and commercial performance of the focal ASDA NPD (new product development) process, along with initial insights into the key determinants of this performance. It also produces the first description of the origin, composition and operation of a Supplier Association within the UK FMCG industry and details the new NPD process mapping method and tool that was developed to conduct this study.

Keywords: FMCG; private-label; suppliers; success rates; NPD; process mapping.

Introduction

The fast moving consumer goods (FMCG) industry is important within the UK economy. FMCGs are low-priced items that are used with a single or limited number of consumption occasions (Baron *et al.*, 1991) and are also sometimes referred to as consumer packaged goods or groceries. FMCG is composed of three major product segments: food, beverage and household (Key Note, 2006a). This industry employs 3.2 million people in the UK, which represents 16% of the total workforce.

It is responsible for £125 billion of consumer expenditure and contributes over 8% of GDP (Bourlakis and Weightman, 2004). The leading UK supermarket FMCG retailers are among the largest and most concentrated in the world in terms of retail floor space, net sales and market share (Kuipers, 1999). They are also among the most profitable (*op cit.*). For example, in the year ended 26th February 2005 Tesco made a pre-tax profit of £1.96 billion on a turnover of £33.97 billion. They have in excess of 30% of the UK grocery market share (Key Note, 2006b) and command over £1 in every £8 of all UK retail sales. This performance makes Tesco the market leader in the UK and the 4th–6th largest retailer in the world, depending upon how this is calculated. ASDA, the retailer reported upon in this paper, employed 128,000 people and had UK turnover of £15 billion in the same period. This performance gave ASDA over 10% of the UK grocery market share, making it the second-largest UK grocer after Tesco (*op cit.*).

Private-label (own brand) products make an important contribution to the success of these leading UK retailers, and involve development volumes that are typically measured in the thousands of new products per retailer per annum (Francis, 2004).

By way of illustration, the UK private-label food and drink market in 2005 was worth £29.2 billion, and this was forecast to grow to £36.3 billion by 2011 (Mintel, 2006). In fact, since the mid-1990s the UK has led Europe in private-label market share as measured by both volume and value. It has also led in advanced private label concepts (Maarse, 1999), with the private-label to brand ratio for grocers such as Tesco and ASDA reaching approximately 50% (Mintel, 2006).

An effective product development capability is mooted within the general management and technical literature as an important strategic asset because of its role in establishing product sales, competitive advantage and organic company growth (Shetty, 2002). Nevertheless, existing evidence indicates that firms are generally poor at the process of designing and launching commercially successful new products. For example, while often taking on the status of apocryphal folklore rather than rigorous academic research, product development failure rates as high as 90% have appeared in the popular and consultancy press (Cooper, 1994). However, citing Crawford's (1979) study of durable business-to-business developments, Cooper (1988) suggests that a more accurate marketplace failure rate for new product launches lies between 35% to 50%, with this figure varying depending upon how "new product" (newness or novelty) and "failure" are defined.

Relatively little has been written about new product and packaging development within the FMCG industry, and the literature that does exist is mainly derived from consultants rather than academics (Francis, 2006; Grunert *et al.*, 1997). There is even less written about private-label new product development (NPD) process performance, the topic of this paper. Unlike durable goods there have been few studies that have attempted to address the classification of relative novelty and associated commercial success/failure rates for the FMCG context. Of those studies that have touched upon this issue, and in a parody of the folklore mentioned earlier, the consultancy firm Ernst & Young LLB cite "[*historical*] *conventional industry wisdom...*" (Ernst & Young LLB/Progressive Grocer, 1997, p. 10) as evidence for a 95% failure rate for the 20,000+ new products introduced in American supermarkets every year. Commenting upon the European grocery and FMCG market, Ernst & Young/ACNielsen (1999a, p. 4) similarly state that "...*it is said that around 90% [of all products launched] fail within two years*".

If true for private-label, such failure rates represent a dichotomy for the world class UK FMCG retailers, and enormous product development costs for all the firms involved in each project. This burden is especially onerous for the contracted product manufacturers who typically bear the brunt of the ingredient, packaging and tooling write-off costs (Francis, 2002) as well as the costs associated with the disruption of integrating these doomed products into their production schedules; an activity described by one of the informants involved in the project reported upon in this paper as "... *like trying to enter the flow of motorway traffic at 20mph during the rush hour*". For both academic and practical reasons, there is consequently a need to conduct a study to validate the actual failure rate and factors that influence private-label NPD performance within the UK FMCG industry.

The aim of this paper is to detail the empirical findings from the first, pilot phase of such a study. This was designated the Supplier Association New Product Development (SANPD) project and was initiated by the newly launched and innovative ASDA Supplier Association (SA) initiative in July 2005. The SANPD project adopted a case study-based research strategy that involved ASDA and six of its leading private-label suppliers that were all drawn from the SA. It also involved ASDA's single-source reprographic agency that was responsible for coordinating all packaging development within its standard private-label NPD process called *Bullseye* that was the focus for this study. The paper is presented in six parts. First, the SA initiative and SANPD project are described in more detail for contextual reasons. Next, the relevant literature is reviewed to enable the project findings to be related to the wider dialogue. This is followed by the research methodology along with an explanation of the new NPD process mapping technique that was developed to conduct this study. The empirical findings that were derived using these methods are then presented and analysed. In the last sections, practical recommendations for process improvement are made and then conclusions are drawn.

ASDA Supplier Association and New Product Development Project

In 2005, ASDA had 1,000 private-label suppliers who represented £6 billion annual cost of goods sold (COGS). The top 35 firms accounted for £2.5 billion of this spend.

Each of these had grown on average 20% year-on-year over the preceding five years and half were in the overall top 50 of ASDA suppliers.¹ In early 2005, a board-level decision was taken to form a Supplier Association (SA) from this group as part of a Lean thinking (Womack and Jones, 1996) initiative to help improve ASDA's supply chain processes and practices. Hines defines a supplier association as:

“A mutually benefiting group of a company's most important [suppliers] brought together on a regular basis for the purpose of coordination and cooperation as well as to assist all the members to benefit from [process improvement activities]” (1994, p. 143).

Such a mechanism for process improvement is well established in industries such as automotive and consumer electronics (*op cit.*). However, this ASDA SA represents the first reported scheme of its type within the UK FMCG industry, and is hence an innovation.

Membership of the association was solicited by ASDA, and seventeen of the top thirty-five suppliers that collectively represented £1.5 billion annual COGS joined the programme. The Chief Executive/Financial Officer and Supply Chain Director of each of these firms attended the formal SA launch event at ASDA House on 20th April 2005. This was chaired by the ASDA Deputy Trading Director who acted as the programme sponsor. At the end of the event, each supplier was tasked with generating one or more project proposals that would yield significant commercial benefit for itself, the

other SA members and ASDA. Each proposal was to be submitted within two weeks and in a structured format that was to detail the deliverables, costs and benefits for all concerned. This scheme and the wider SA initiative were administered by the ASDA Commercial Support Team. Ninety-two proposal documents were duly received, using cluster analysis the team organised these into five “Just Do It” and eight “Transformational” improvement projects. These two categories were differentiated by the size of their estimated benefit and perceived ease of implementation. Transformational projects also required significant cross-functional co-operation to realise their project goals.

The first of the transformational projects to be implemented was suggested by six of the SA firms (Table 1) and was designated the Supplier Association New Product Development (SANPD) project. It proposed to improve the success rate and time-to-market performance of the standard ASDA Bullseye private-label NPD process.

Table 1 – Suppliers involved in the SANPD Project

	Supplier A	Supplier B	Supplier C	Supplier D	Supplier E	Supplier F
Product categories supplied (with ASDA market share)	Household (18%), Health & Beauty (10%)	Primary Poultry (50%), Rotisserie (100%)	Rice, Pasta & Foreign Foods (90%), Condiments & Cooking Sauces (65%)	Bagged Leaf (30%), Prepared Salads (32%)	Milk (100%), Cream (100%)	Cooked Meats (82%), Bacon (12%), Sausage (12%), Fresh & Coated Poultry (100%), Fresh Chicken (100%), Frozen Chicken (58%), Lamb (50%), Pork (100%), Pies (40%), Deli (1%), Meals Made Easy (1%), BBQ (30%)
Percentage of firm's turnover attributable to ASDA	27%	40%	33%	100%	33%	16%
Number of Stock Keeping Units (SKU) with ASDA	189	82	179	15	150	297
Number of NPD projects launched in 2004	120	20	49	37	10	47
NPD process development route: Supplier Technology Push (STP) or Retailer Need-Pull (RNP)	STP	RNP	STP	RNP	RNP	RNP

Note: the names of the firms have been made anonymous for reasons of commercial confidentiality.

These six SANPD firms exemplified both the SA and wider private-label supply base. They represented £0.8 billion COGS, supplied 22 ambient and fresh/chilled product categories and had ASDA-related turnover ranging from 16% to 100%. Their individual number of ASDA stock keeping units ranged from 15 to 297 and their NPD activity with ASDA in the year preceding the project ranged from 10 to 189 new product lines launched.

Prior to the launch of the Bullseye NPD process in 2003, ASDA took approximately 40 weeks to develop and introduce a typical new product (from supplier brief to finalised product and packaging

development). Bullseye was introduced to increase the flexibility of the standard development process and significantly reduce development lead times to enable a faster reaction to market trends (ASDA, 2005).

While undoubtedly partially successful there was widespread discontent among SA members regarding the perceived performance of this new process. However, there was no centralised performance measurement system upon which to base this assertion.

Following discussion, there was also no consensus regarding how the Bullseye process was actually configured and used in practice, even though a standard procedure in the form of a user guide (*op cit.*) had been circulated and supplier training provided.

The nucleus of the resultant SANPD project team was formed from the most senior product development manager at each of the six SANPD suppliers. The Director of Client Services from ASDA's single-source reprographic agency subsequently joined the team. This was because his firm was universally criticised by the SANPD suppliers regarding the number of packaging errors and "long" (ten week) inviolate packaging development lead time that it was responsible for managing.

The authors adopted the role of facilitators and change agents in reciprocation for the research access, making this an action research project (Eden and Huxham, 1996).

This SANPD team agreed the project's practical terms of reference, which were to reduce the established new product launch failure rate by 25% and time-to-market by 15% to derive forecast benefits that ranged between £1 to £2 million per annum.

Literature Review

A number of research reviews and evaluations have been written to summarise and characterise the very extensive literature that exists on organisational innovation.

Among these, Wolf (1994) identifies a distinct stream of research he calls [NPD] process theory that aims to establish the processes that organisations adopt and factors they consider when implementing innovations. This stream contains a large technical component that is characterised by its focus on the product development phase of the wider innovation process, along with the applied nature of the underlying research (Francis, 2006).

The quantification of new product success rates and isolation of the key factors or determinants that are associated with the probability of launching a successful new product ("separating the winners from the losers") forms an established research topic within this body of technical NPD literature (Chroner, 2006). Authors such as Barclay *et al.* (2000) in the UK have adopted such an approach. However, it is the cadre of academics associated with the US-based Product Development Management Association (PDMA) that have been particularly influential on this topic, with notable contributions by Cooper (1988), Cooper and Edgett (2005), Cooper and Kleinschmidt (1993, 1995),

Griffin (1997), Griffin and Page (1996) and Rosenau *et al.* (1996). This PDMA-school agree on the importance of a strong market orientation to all development projects, which need to be market driven and customer focused; the most important success factor being the need to commercialise a “unique and superior product” developed in response to the “voice of the customer” in order to achieve widespread market acceptance.

Clearly, categorisation of the newness (novelty) and definition of relative success or failure of developed products forms an important adjunct to such work. Within the innovation literature, newness is typically expressed as ranging between incremental to radical or transformational (Tidd *et al.*, 2001) and has been used as a basis of typologies for classifying individual NPD project types. The most influential such typology within the technical NPD literature is that proposed by Booz Allen and Hamilton (1982). This considers the perceived newness of the product to both the market and innovating company and has been used repeatedly as a framework for research design (Griffin and Page, 1996). Using this in their influential study of measures of new product success and failure, Griffin and Page (*op cit.*) conclude that determining the level of success of an individual NPD project is a multi-faceted exercise that must consider the measurement of three independent dimensions. Their first two dimensions of NPD performance are based respectively on consumer performance (was it a marketplace success in terms of demand and longevity?) and financial performance (was it profitable?) and amount to that project’s commercial success. The third dimension is technical or process-based. This involves measuring intrinsic, operational performance criteria such as time-to-market and development cost.

PDMA-school research is premised upon the existence of an underlying stage gate process model (Cooper, 1988) whereby “go” (proceed downstream) and “kill” (drop the project) decisions are made at formal review points throughout the process.

Two particular performance measures have been emphasised. The first is the success and failure rate as a percentage of all products launched. The second is the percentage of all development projects that are killed per process stage, along with the ratio of developed projects per resultant commercial success (“winner”). These measures reveal the influence of the BoozAllen and Hamilton (1982) *mortality of new product ideas* curve, whereby an attempt is made to screen-out the new product ideas and concepts that are likely to result in commercial failure (“losers”) at the earliest possible process stage, and hence influence the profile of the mortality curve. The underlying logic of this conventional approach is that the most expensive NPD mistake is the selection of an imperfect opportunity, and this is best avoided by adding more review points to the *fuzzy front end* (opportunity identification through concept development) portion of the process (Smith and Reinertsen, 1998, p. 49). The wider technical NPD literature is rich with examples of projects from large manufacturers of branded durable goods particularly from the US and Japanese automotive, electronics and IT industries. By contrast, little research has been conducted that has dealt specifically with the FMCG industry or retailer private-

label NPD processes and their performance levels (Francis, 2006). Most process-oriented studies in this area involve comparisons of the food with other, typically higher technology industries (Grunert *et al.*, 1997). However, some studies related to the focal topic do exist. Hughes (1997) compares the organisation of retailer private-label NPD processes of the food industries of the UK and US. He highlights their marked difference and concludes that these originate in the contrasting balance of power relations at the retailer-manufacturer interface that favour the UK retailers more so than those in the US; helping to explain the strength of retailer private-label products in the UK. Also notable is Nijssen's (1999) study of the success factors involved in developing line extensions (new secondary product characteristic such as flavour, size or format) in FMCG, although he addresses manufacturer branded products rather than retailer private-label. Another manufacturer brand-oriented study is the 1995 survey that was conducted by the consultancy firm Group EFO and reported in Griffin (1997). This involved polling 83 firms that manufactured new consumer packaged goods and found that on average 25 ideas or concepts were required to be developed to produce one commercially successful product. This 96% failure rate would seem to support the apocryphical forecasts suggested in the introduction to this paper.

Of more direct relevance is the study by Francis of the Tesco standard product development process (2002, 2004) and stage model design within the UK FMCG industry (2006), although this study did not address private-label success rates. The only attempt to quantify such private-label NPD performance is the PDMA-inspired Efficient Product Introductions (EPI) project. This was designed and managed by the consultancy firm Ernst & Young in conjunction with the market intelligence firm ACNielsen. The EPI project set out to ascertain the NPD success/failure rates for all types of project within the European FMCG sector and contained a distinct stream of research on the UK (Ernst & Young/ACNielsen, 1999a, 1999b). While it also aimed to establish the underlying explanatory success factors, it omitted operational performance criteria such as time-to-market. 7,682 European Article Numbering (EAN) code records from the UK were extracted from the ACNielsen database of new European FMCG product registrations. The sample encompassed all the new products launched between 1st June 1996 to 30th June 1997 from 32 representative food, beverage and non-food (household) product categories. Each was first classified into its relative type of innovation project by reference to a typology of newness that could trace its ancestry to Booz Allen and Hamilton (1982). Next, that product's distribution coverage data thirteen months after its launch was extracted from the database. Contrary to the advice of Griffin and Page (1996) on the necessity for multi-dimensional measurement, this was the single measure used to assess its relative success or failure. *Distribution coverage* meant the proportion of all possible national retail outlets at which the product was still being sold, with a coverage of 50% or more deemed a successful new product. The thirteen month period was designed to include the typical one month post launch promotional support, followed by a twelve-month unsupported period.

EPI classified all retailer private-label products as belonging to the Me-too project type (copies of existing products). It found that nearly 82% (6,285) of the UK sample were Me-too products, of which approximately 49% (3,091) were retailer private-label. Clearly the use of the single, distribution coverage measure introduced a bias against private-label success because such a product can by definition be sold only in the host's outlets. With this reservation in mind the failure rate for the Me-too category as a whole was between 90% to 95% whilst failure rates for the other types of innovation project were found to vary between 70% to 95%. In direct accordance with the PDMA-school, EPI concluded that the single factor most strongly correlated with commercial success was the selection and development of a highly innovative ("unique and superior") underlying product concept (Ernst & Young/ACNielsen, 1999a).

Research Methodology

To paraphrase Yin (2003), a case study-based research strategy was adopted because of the desire to conduct an empirical enquiry to explain a contemporary phenomenon in a real-life context, using multiple sources of evidence. The SANPD case addressed the following research purpose: *"To understand the configuration and current level of performance of the ASDA Bullseye private-label NPD process as a precursor to informed intervention into the key factors influencing this performance and hence realise significant process improvement"*. The resultant research design had three distinct phases. The first phase was the pilot project and was conducted by a Core Team drawn from the SANPD group that involved representatives from ASDA, the reprographic agency and two volunteer supplier firms. It sought to explore some of the perceptions that had grown up regarding the Bullseye process and establish how it was actually configured and used in practice. In the absence of a centralised performance measurement system it also sought to establish the current commercial and operational performance level associated with the focal process, and to provide some preliminary insight into the factors that might be influencing this performance. It is this pilot phase that is the subject of this paper.

Having validated the findings of this pilot phase with the wider SANPD team, the second phase will quantify the general NPD performance of the Bullseye process by means of a baseline performance questionnaire to the SANPD group. This exercise will classify each individual project developed over the preceding year by each of the six SANPD suppliers into its appropriate NPD project type. It will also quantify the commercial success/failure rate, development lead-time and cost data at this same level of granularity. Analysis of the collective first and second phase findings will then affirm the factors that most strongly influence the performance of this NPD process. This understanding will, at that stage, be used to make informed interventions to redesign the process and its accompanying performance measurement system. The third phase will be to implement this improved process to achieve the SANPD project's terms of reference. The improved NPD process will first be rolled out to

the SANPD group and then after their feedback, disseminated to the wider SA followed by the whole ASDA private-label supply base.

Case sampling criteria and data collection procedures

The first task of the pilot phase was to quantify the commercial success/failure rates for the SANPD suppliers to ensure that the project's terms of reference were indeed based upon a real rather than perceived problem. This was conducted at an aggregate level for the whole group of six suppliers. Having established that a real problem did exist, an initial project-planning meeting was held that involved the whole SANPD team. The objectives of the meeting were to define clear project deliverables, timescales and resource allocations. They were also to identify two volunteer Core Team suppliers, and diarise the subsequent fieldwork events. It was agreed that *all* Core Team members were to attend *all* subsequent SANPD project events to ensure the maximum transparency of the data collected. Purposive case selection based upon some feature of interest to the study, as opposed to a random or convenience selection, can form the basis for a strong justification of the representativeness of that study and hence ability to generalise from it (Silverman, 2000). The "typical" (Stake, 1994) case sampling credentials of the SANPD team were established in the previous section. Suppliers A and B were subsequently selected to act as the two Core Team participants because they represented polar extremes (after Eisenhardt, 1989; Pettigrew, 1990) and in two dimensions. First, they developed ambient versus fresh/chilled product types. More importantly, the new product launch performance data derived at the outset of the project had indicated that they were respectively the best and worse within the SANPD team in terms of NPD launch success rates. Reflection upon the subsequent findings established that they also represented two distinct product development process routes: termed *Supplier Technology-Push* and *Retailer Need-Pull* (see the following Discussion section).

The Core Team convened at ASDA House to establish an overview of the Bullseye process stages that were actually used in practice. These were found to indeed approximate to the standard stages detailed in the Bullseye manual. The team then started document collection and recorded the main issues confronting participants in this process. An *issue* was defined as an example of a significant problem or symptom of a wasteful or sub-optimal activity. Last, the specific focal innovation projects to map out during the agreed fieldwork events were identified by Suppliers A and B. These were recently developed new products that exemplified best, worst and "normal" performance of the Bullseye process from the perspective of these two suppliers; hence again satisfying purposive sampling criteria for typicality and polar extremes.

A series of one-day structured data collection workshops were subsequently held at ASDA, Suppliers A and B and then the reprographic agency (which included a design agency representative). Each workshop involved mapping the host firm's respective part(s) of the process and adding detail to the Bullseye stages established at ASDA House. Care was taken in each case to capture and use the

organisation's specific terminology, with a glossary of terms and synonyms being built to support this. With the permission of all involved, all of these workshops were audio taped for subsequent transcription and analysis and numerous photographs were taken at each event.

A new NPD process-mapping method and 8FM tool

Each data collection workshop was standardised and oriented around a newly developed NPD process mapping tool (Fig. 1). This tool was produced in response to the suggestions made by Francis (2006) for supplementary techniques to convey the structure and dynamics of NPD processes for improvement and control purposes. He suggests that the stage model convention that conceives such processes as a series of linear-sequential discrete stages and tasks (Wolf, 1994) needs to be supplemented by additional forms of representation that convey inter-firm boundaries, workflow pathways, capacity information and cycle time data per process stage. The resultant tool is a derivative of the Four Fields cross-functional process mapping technique popularised by Dimancescu (1992), which is so called because it integrates four "information" fields within its form. This new tool embodies both a Lean thinking approach (Hines *et al.*, 2006) and much of the supplementary requirements suggested by Francis. It achieves this by modifying and extending to eight the number of information fields contained within it; hence the designation *Eight Fields Map* (8FM).

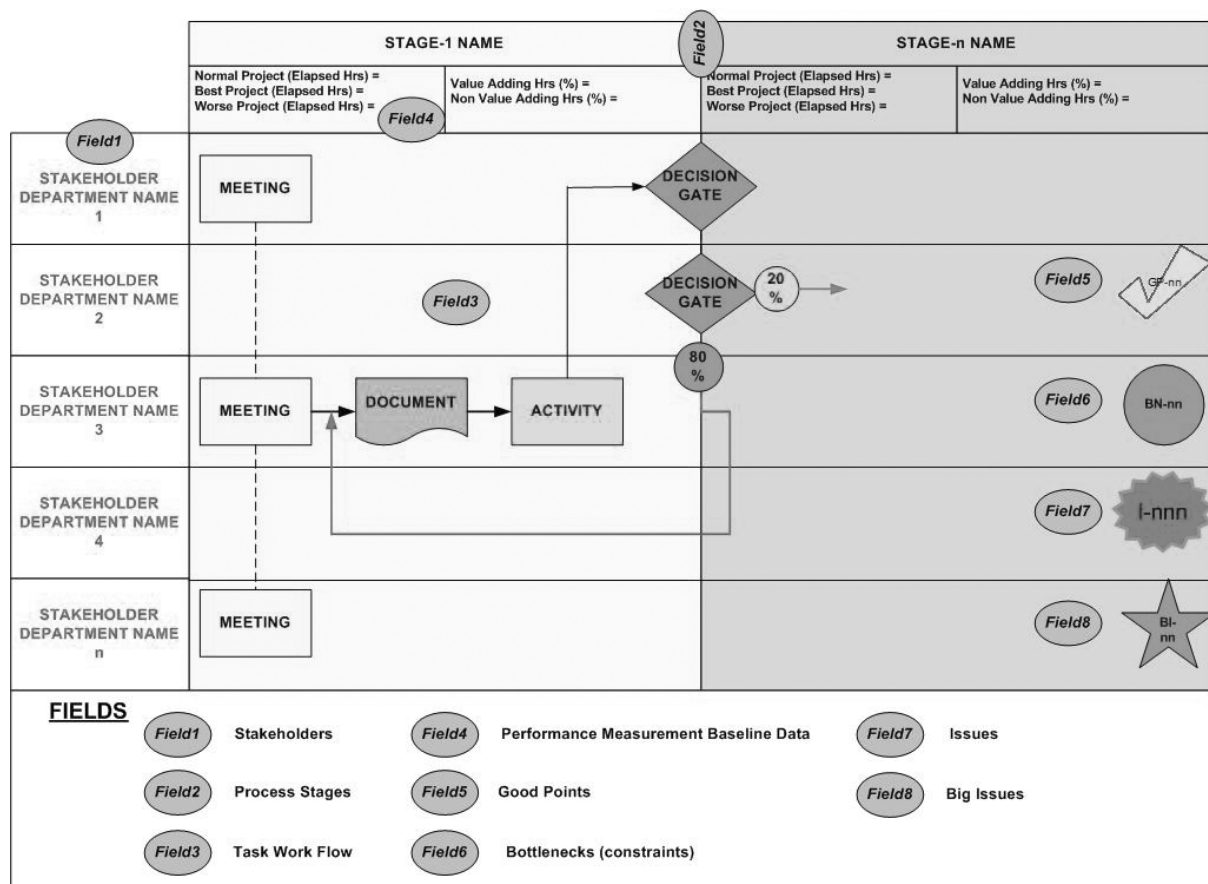


Figure 1 – The eight fields NPD mapping process mapping tool (8FM).

Prior to each data collection workshop the Core Team member for that firm identified all the stakeholder departments involved on the critical path for their portion of the Bullseye process (such as finance, technical, purchasing, production), and invited the relevant managers to participate in the workshop. A long piece of brown paper was marked with horizontal “tram lanes” (rows) and the names of these internal stakeholder departments were added and colour coded green. External departments at customer and supplier firms with whom these stakeholders interacted on the critical path were also added. These were colour coded red. This completed the first field of the map, with the horizontal layout ensuring that the map could be displayed around the walls of a suitably sized room. The morning of the event itself was devoted to completing the first three fields and the afternoon the last five fields of this map. The day started with a brief presentation of SANPD project aims, personal introductions and confirmation of the stakeholder (*Field1*) details. Next, the participants were asked to identify all of the process stage names (*Field2*). For reference purposes these names were listed on post-it notes and added in chronological sequence along the top of the brown paper. These were to form a series of delineative columns across the map; each of which had a constituent task workflow and typically ended in a decision gate.

The remainder of the morning was dedicated to detailing this workflow (*Field3*). For reference purposes the official product code, name and packaging of the previously identified best, worst and normal focal products were now appended to the brown paper. With a specific focus on the normal example, the assembled participants were asked to map out the most important aspects of the work flow through each of the process stages. This exercise was conducted in a highly interactive manner by placing colour-coded post-it notes in the relevant stakeholder lanes and drawing connecting arrows using a green marker pen to represent downstream flow. Four task-type symbols were used; *Formal Meeting* (yellow), *Document* (blue), *Activity* (green) and *Decision Gate* (red). The latter included any formal review point or multi-person panel tasked with making a “go”, “kill” or “rework” (back upstream) decision. Where multiple stakeholders were involved in a meeting or decision gate, multiple concurrent post-its were used and joined by a dashed line. For each decision gate, the probability of each exit route was captured and annotated. Go routes were again marked in green for consistency, while kill or rework routes were marked in red. For each of the (blue) document symbol on the map, a copy of the source documentation was collected and appended to the brown paper for reference.

The afternoon session started by completing the performance measurement baseline data (*Field4*) for each process stage. First, the elapsed hours (lead-time) was established for the normal project. This

was then repeated for the best and worst case projects to reveal the range of time-based performance per process stage. Again with specific reference to the normal project, the participants were asked to agree the cycle time that each of the Activity (green) tasks had taken. An estimate was necessary because no such task-level cycle time data was maintained by any of the firms. An indicative value added metric (after Hines *et al.*, 2002 and Womack and Jones, 1996) was now calculated by establishing the sum of the Activity cycle times as a proportion of the total lead-time for that stage. Similarly, a non-value added metric (*op cit.*) was calculated as the balance of time as a proportion of this total.

The remaining fields were then completed, with a distinct post-it note shape and colour being used to differentiate each. Participants were asked to identify the good points (*Field5*) of the existing process in order to embrace its existing strengths. Each suggestion was captured on a post-it note, prefixed “GP” plus a unique reference number and appended to its relevant location on the map. Using the same procedure, the assembled participants were subsequently asked to identify potential bottlenecks (capacity constraints) that were prefixed “BN” (*Field6*), followed by issues (*Field7*) that were prefixed “I”. Last, an opportunity was provided for all participants to review all the maps and notes made during the day to validate their accuracy.

Off-site, the researchers compiled these issues into a list and then conducted a cluster analysis based upon their causality or similarity to establish a smaller number of thematic headings. These were termed big issues (*Field8*), prefixed “BI” and again located on the map. The resultant diagram was at this point transcribed using a computerised drawing tool and circulated to all workshop participants who validated its accuracy and applicability to themselves. Due to the length of this

map (three metres), all of the diagrams that follow in this paper are represented in schematic format. However, a segment of the original 8FM is provided as an Appendix for illustrative purposes.

In summary, this data collection procedure entailed 53 man-days of direct participant support (direct attendance at fieldwork events). The evidence that was collected included 21 hours of audio, 33 photographs, 50 company documents and reports and the identification of 168 separate issues/opportunities for improvement. Preliminary analysis by the researchers of this body of evidence was followed by a review workshop involving the whole SANPD team. This was designed to disseminate the findings of the pilot project and to validate their applicability among the wider group of six suppliers; hence improving construct validity and reliability (Yin, 2003). The findings were subsequently accepted as both accurate and representative and formed the basis for launching the second phase of the project. Feedback was also sought on the new 8FM technique. This was assessed to be a useful and systematic approach for generating data about the structure, dynamics and performance of an NPD process. It also received plaudits for the way it revealed improvement

insights. Chief among the limitations recognised were the resource intensity and discipline of approach required to produce the map.

Discussion

Commercial success/failure rates

The findings of the new product success/failure rate assessment exercise undertaken at the outset of the project affirmed the overall performance of the current Bullseye process (Fig. 2). In the twelve-month period leading up to the study, the six SANPD manufacturers were found to have collectively developed 473 new private-label product lines for ASDA of all innovation project types. Contrary to the advice of Griffin and Page (1996) on the need for tri-dimensional measurement of new product performance, the Bullseye process used only a single metric; if the new product was still available on the shelf (“listed”) twelve weeks after its launch date it was deemed to be a “success”. If it was not listed after this period it was deemed to be a “failure”. No data was available to establish the longer-term viability or financial performance of a new product, although this twelve-week period was intended to convey some nominal point for the break-even of development costs. 48% (227) of all developed lines were classified as successful using this survival-based metric. However, there was a significant difference between the highest and lowest performing suppliers with Supplier A having an 82% success rate compared with 8% for Supplier B.

The six SANPD manufacturers developed 473 lines in 2004, of which::

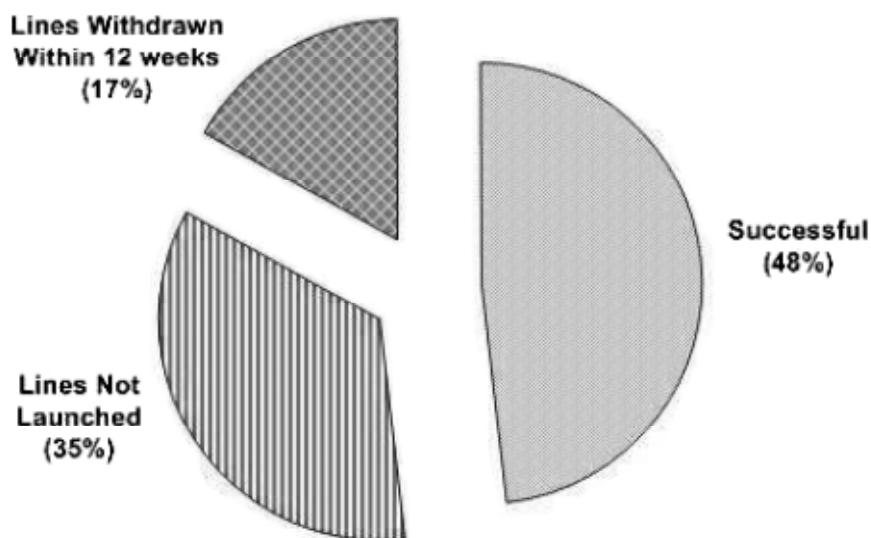


Figure 2 – SANPD suppliers – product launch success/failure rates (2004)

Source: Asda Commercial Support Team, June 2005.

Of the failures, 17% (80) of the developed products were withdrawn within twelve weeks due to a lack of demand. In an anathema to the PDMA-school and mortality curve concept (Booz Allen and Hamilton, 1982) the figure also reveals that a surprising 35% (166) of products were *fully* developed

but not launched. This raises the interesting questions of whether this issue exists more widely in the FMCG industry and/or whether it is under-reported in other industries. Discussion with the SANPD team members established that there were two reasons for this phenomenon.

First was a lack of shelf space. Each new product launch entailed the removal of at least one existing product as shelf space was finite. This decision was the remit of ASDA's Merchandising and Ranging functions, who were not involved until the end of the Bullseye process. Second was event-specific products such as those developed for Halloween missing their planned launch date and hence becoming "obsolete". The twelve-month rolling planning mechanism explained in the next section stipulated specific quarterly launch dates for all new products developed in that period. These were called *Key Moments*. SANPD informants confirmed that this philosophy was driven by the in-store performance measurement system that elevated the importance of constraining store managers' budgeted hours for all product merchandising and ranging activity. The logic was to minimise in-store workload (cost), disruption and layout changes by focusing all range-related activity (including new product launches) into four days throughout the year. This of course stimulated the processing of large batches of new products within the Bullseye process.

The conceived Bullseye process configuration

The Bullseye process is made up of two broad phases. These are called *Planning* and *Development*. Planning takes place through a system of rolling quarters. For example, if a development request is submitted in quarter 2 the process is designed for approval by the end of the same quarter, development to start in quarter 3 and the product to arrive in store in quarter 1 of the following year. According to its conceived configuration, the Development phase has four stages (ASDA, 2005, p. 2). To achieve the lead-time targets stipulated in the Bullseye manual for NPD projects, these stages are designed to embody the level of concurrency illustrated in Fig. 3. On this diagram, all stages and their constituent activities are represented true to their relative starting point in time, and in proportion to their relative duration. However, specific activity/stage cycle time durations are omitted for reasons of commercial confidentiality.

The *Product Development* stage starts with the selected supplier being briefed by ASDA regarding their product specification and critical path dates for the project. A food product for example is then

developed by the supplier on kitchen-scale equipment before submission to ASDA for approval.

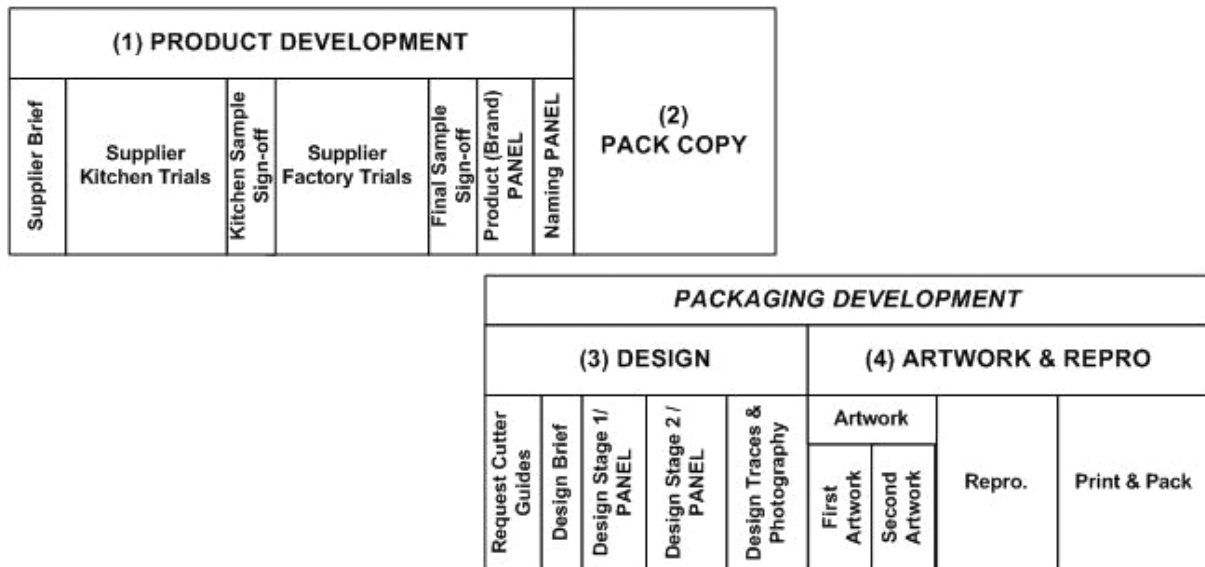


Figure 3 – Conceived Bullseye process configuration

Source: Adapted from Asda Bullseye user guide (2005).

Note: Specific activity/stage cycle time durations are omitted for reasons of commercial confidentiality.

If approved, factory trials ensue to demonstrate that the kitchen sample results can be achieved on full-scale production equipment. This culminates in the product being sent to an external laboratory (Lawlabs) for microbiology and nutritional information tests. On final sample sign-off, it is taken to the Product (Brand) Panel for tasting and examination by the Innovations Chef, Head of Product Development and Head of Technical. If approved, it advances to the six person Naming Panel who agree the legal name and marketing descriptor, icons (claims such as “nut free”), storage, cooking/preparation instructions and any meal ideas. For convenience these panels are usually conducted consecutively.

Pack Copy is all the creative (marketing) and informative words printed on the packaging. Pack copy information is collated by the supplier during the Product Development stage and culminates in the Naming Panel information. Using the reprographic agency’s web-based project management and tracking system called ODIN (On-Line Digital Information Network), all copy text is then converted into a legally binding specification that details nutritional and recipe information. The content is first checked by a Copywriter then passed to a Trading Standards Officer to check that it conforms with legislation. After any amendments by the supplier, the pack copy is converted into a digital file and placed on the extranet in preparation for the Artwork stage.

Design is where the look and feel of the product packaging emerges, and in accordance with the Concurrent Engineering principle of seeking the maximum parallel processing of previously sequential activities (Stevens *et al.*, 1998) it should occur concurrently with Product Development and

Pack Copy. The first step is for ASDA to request the cutter guides from the supplier. These are the flat pack outlines of the packaging to be run on the supplier's packaging equipment and indicate all the print, non-print and fold areas. Once received, a Design Brief meeting is convened to discuss the guidelines provided to the commissioned design agency and agree the subsequent schedule dates. Multiple design concepts are generated by the agency and then formerly reviewed by ASDA at the Design Stage 1 Panel. The chosen concept is developed by the agency and subsequently presented for approval at the Design Stage 2 Panel. The stage ends with the production of a photograph of the product, along with a design trace (accurate flat version of the final packaging); both of which need to be signed-off by the reprographic agency.

The *Artwork and Reprographics* stage starts when this approved design material is made available with the pack copy. Artwork comprises of embedding the front, back and side panel text copy and photograph within the packaging design of which two such activities of increasing refinement are designed into the process. Once the resultant artwork has been approved by all parties involved in the project the digital artwork files are posted onto the extranet for Reprographics. This involves producing print-ready files from which the printer can make printing plates. As part of this process a full-colour proof called a cromalin is produced that illustrates exactly what the final packaging will look like when it is printed. Once approved the print-ready files are sent to the printer for the packaging material to be physically produced and shipped to the supplier in time for their first production run.

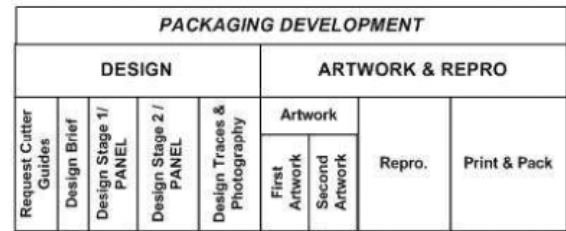
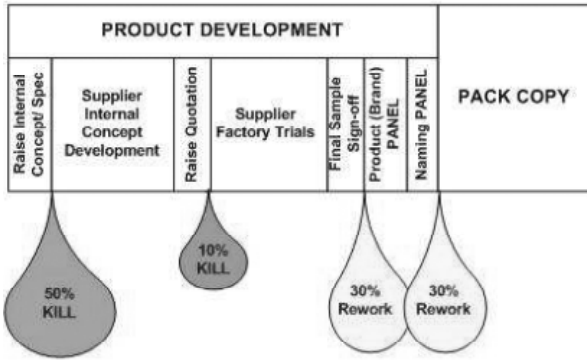
Actual Bullseye process configuration and operational performance

The new 8FM process mapping technique was employed to establish how the current Bullseye process was actually used in practice rather than how it was conceived in the user guide. It was also used to explore the rework, lead-time and development cost performance of the two Core Team supplier firms. Figure 4 summarises the findings.

It adopts the "leaky pipe" analogy (*anon.*) whereby any deviation from downstream workflow in the form of a kill or rework decision is represented as a teardrop-shaped leak with its concomitant development cost and lead-time implications. The size of each teardrop icon is proportional to the size of that leak. For a rework icon the relative thickness of its border-line infers the typical number of rework iterations before work is accepted to progress downstream with the thickest line representing four iterations.

This figure reveals six observations. The first is that compared with the conceived process (Fig. 3) and the Product Development stage is actually Y-shaped. While all packaging development involves the same sequence of activities, there are two distinct and co-existing product development routes.

Supplier Technology-Push Route (Supplier A)



Retailer Need-Pull Route (Supplier B)

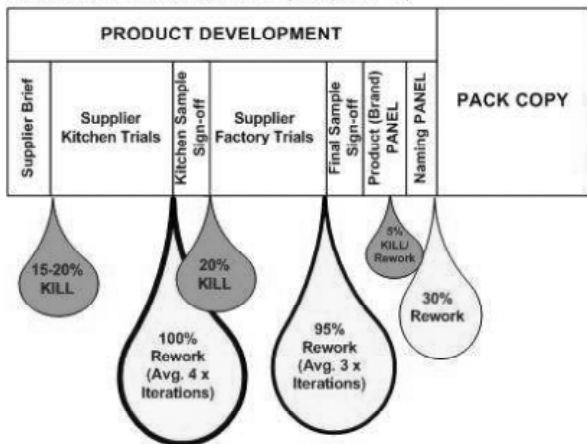


Figure 4 – Actual Bullseye process configuration

The route undertaken by Supplier A is entitled *Supplier Technology-Push* because it reflects the innovation process model advanced by Carter and Williams (1957). This model is characterised by an emphasis on the proactive role of the R&D department (Freeman, 1982) and the passive role of the user/customer (Rothwell, 1986) by assuming that advances in basic science give rise to applications that eventually find their way into the marketplace. Supplier A’s internal research or technological capability yields a concept and specification that is then developed into a factory-scale product and associated financial quotation. At this point it is offered (“pushed”) to the supermarket retailers along with the aspired profit margin. If ASDA accepts this proposal, it enters their conventional sample sign-off then panel review activities. Bullseye did not recognise this route.

By contrast, Supplier B was indeed found to follow the previously explained standard development process whereby they responded to the retailer’s product specifications. This route was consequently entitled *Retailer Need-Pull* in recognition of the innovation model attributed to economist Jacob Schmookler and his premise that the market signals a need that stimulates the production (“pull”) of an innovation in response (Saad, 2000). Given the respective success rates of Supplier A (82%) versus Supplier B (8%) it is therefore possible to speculate that merely developing in response to the “voice of the supermarket customer” is no guarantee of marketplace success.

The second observation is that the Design stage does not actually start until after the pack copy has been finalised. The process is therefore configured linear sequentially for product and packaging development and not concurrently as conceived suggesting a significant impact on expected development lead-time. Feedback from staff at the reprographic agency indicated that the reason they had reconfigured this part of the process was their lack of trust in the accuracy of the pack copy and other information originating from suppliers.

Third is the very different workflow [leak] profiles of the two suppliers. Supplier A makes all of its kill decisions very early in the process and before any rework is conducted, as directly espoused by Booz Allen and Hamilton (1982) in the principles underlying their mortality curve. In contrast, Supplier B kills a similar total percentage of its development projects. However, it conducts very significant levels of rework activity often to subsequently kill the project. Follow-up interviews

to explore these profiles revealed that Supplier A benefited from being responsible for producing its own initial product concept and specification documentation, which was comprehensive and expressed in terms of objective criteria. It also benefited from its products being chemically engineered rather than produced in a kitchen. As a result there was a disinclination for non-expert staff outside the firm to instigate subjective changes during the panel reviews. Taken in conjunction these attributes amounted to a “freezing” of the product specification — a fuzzy front end practice associated with superior NPD performance in the literature (Smith and Reinertsen, 1998).

The fourth observation is that no projects are killed after the Product Development stage. Naming Panel approval acts as a pivot after which projects seem to be “made to work” and forced through the packaging development stages. The fifth is the particularly high levels of rework experienced in the Artwork and Repro stage, suggesting that these activities are either inherently error-prone and/or that these decision gates are acting as quality control points (Crosby, 1984) for upstream variation and errors. Observations four and five might therefore be related. The sixth observation is the relatively large number of formal decision gates designed into the process. Given this plenitude, the magnitude of rework and the linear-sequential process configuration of the actual lead-time was unsurprisingly found to be on average 25%–30% longer than the standard stipulated in the Bullseye manual.

Turning lastly to the cost aspect of operational performance, it was found during the mapping procedure that individual development project costs were not formally recorded or used for NPD performance measurement purposes. Corroborating the findings of Francis (2002), it was also found that it was the suppliers that bear the majority (although not necessarily all) of the ingredient, packaging and tooling write-off costs associated with failed new products.

Good points, bottlenecks and big issues

Validation by the full SANPD team of the last four fields of the 8FM during the final review workshop revealed further insight into the most important factors believed to influence the performance levels

noted above. A number of *good points* (strengths) of the current Bullseye process were affirmed. The team agreed that it was appropriate in its scope of coverage and was structured logically; although they also acknowledged the inflexibility of the stage gate approach and hence supported this same conclusion by Cooper (1994). They also complemented the twelve-month horizon of visibility of development projects that Bullseye provided, and the benefits this offered to stakeholders for planning purposes. The reprographic agency's ODIN extranet-based tracking and reporting system received particular plaudits. The general accessibility and approachability of ASDA staff was likewise valued.

For example, the ability to talk to the Innovations Chef before the Product Panel. Three potential *bottleneck* (BN) areas were highlighted for their influence on NPD lead-times. BN-01 was the Key Moment mechanism, as failure to meet its deadline resulted in a *de facto* three month launch delay. BN-02 occurred after the Supplier Factory Trial. Bullseye mandated the single sourcing of all ASDA-related external laboratory work with a firm called Lawlabs, who were also used by a number of other large supermarkets. Periods of high demand on Lawlabs such as pre-Christmas or on the run up to an ASDA KeyMoment could consequently result in significant delays. BN-03 was the availability within the product development stage of all the ASDA staff members necessary to conduct the panel reviews.

Of the numerous and interrelated *big issues* (BI) revealed on the 8FM, it was agreed that five had the most influence on the amount of rework and hence unnecessary development cost and lead-time. BI-01 was the most influential and was called "going off half cocked" by the SANPD team. In contrast to the practice of Supplier A, this referred to the lack of a standard or comprehensive product concept specification document. Consequently, new products often lacked objective specification or were started before all criteria were agreed and signed off by all stakeholders, resulting in subsequent specification changes and rework profiles akin to those demonstrated by Supplier B. BI-02 compounded this and was called "gilding the lily" by the team. This referred to an ASDA tendency to instigate constant improvement changes of an in-progress project in the pursuit of "perfection".

The team characterised BI-03 as "too many unqualified fingers in the pie". They believed that too many formal participants were required at the product development panels, contributing to the bottleneck situation noted above. It was also strongly believed that some of these participants were too junior or unqualified to be making these decisions. A commonly cited example was the taste test at Final Sample Sign-Off that involved the ASDA Marketing Manager. This position was typically occupied by an employee in their first role with the firm and who had received no formal training in such a highly specialised skill. In many ways BI-04 was an outcome of the first three big issues. It referred to indecisive or subjective decision making at many decision gates, especially the panels. Such decisions were claimed to result in much unnecessary rework or even prematurely killing some projects. Last, BI-05 cast further insight into the high pack copy rework rate and other downstream rework rates noted on Fig. 4. It emerged that in response to the ongoing specification changes and the

inviolate ten week lead-time for packaging development that was enforced by the reprographic agency, suppliers often entered knowingly inaccurate “dummy” pack copy data into the ODIN system to instigate the Design work in the hope of realising the unmoving launch deadline anchored at the outset of the project. This affirms the reprographic agency’s quality control role, particularly at the pack copy decision gate. Given the unanimous criticism levelled at the reprographic agency by all SANPD suppliers at the outset of the project, this yielded the surprising reflection from Supplier A’s Core Team representative that “*It seems that the repro agency is the hero; not the villain!*” However, they were not completely blameless as they were indeed found to preside over some inherent packaging errors. They were also partly responsible for constructing a vicious circle, as their linear-sequential process reconfiguration of the Pack Copy and Design stages had increased the time pressure on the suppliers and hence stimulated the use of the dummy data rouse. Fascinatingly, a subsequent interview with the Director of the agency established that the mandate for this ten-week period had initially been granted to hedge against the levels of rework typically encountered during packaging development. Therefore if such rework could be reduced, so could this ten-week period.

Practical Recommendations

The pilot phase of the SANPD project was designed to establish how the ASDA Bullseye NPD process was configured, used and performed in practice. It was also designed to reveal some preliminary insights into the factors that influence this performance. The implications of this applied research project are consequently of particular relevance to ASDA and its private-label supply base. An ability to generalise beyond the scope of the participant organisations is a limitation of the case study method (Silverman, 2000; Yin, 2003). However, given the case sampling criteria and validation procedures detailed in the ResearchMethodology, the following recommendations and conclusions are expected to have applicability for the wider UK FMCG private-label supply base. The previous discussion of the Bullseye process, and particularly that regarding the bottlenecks and big issues, highlighted a number of concerns and their causes. Ten resultant recommendations follow (Table 2) for addressing these findings and therefore helping to achieve the SANPDproject’s performance improvement objectives. The last two columns of the table indicate the difficulty of implementation and likely performance impact of each recommendation as perceived by the research team. The table provides a suggested change agenda by presenting these in highestlowest performance impact sequence within ascending level of implementation difficulty.

Conclusions and Future Research

This paper aimed to contribute to the body of knowledge on private-label NPD failure rates within the world class UK FMCG industry. It produced the first description of the origin, composition and operation of a Supplier Association within the UK FMCG industry. It also detailed a new NPD process mapping method and 8FMtool that was developed to conduct the study and revealed that a

12-week shelf space survival metric was used as the uni-dimensional measure of success. No equivalent measurement of commercial success has been detailed elsewhere in the NPD literature, making a comparison of these findings difficult. However, this is a meaningful success measure to ASDA and its development supply base and therefore should not be regarded lightly.

Table 2 – Summary of preliminary recommendations from SANPD phase-1.

No	Recommendation	Implementation difficulty (high/medium/low)	Performance impact (high/medium/low)
1	After all relevant stakeholders have signed-off the product specification document in the Product Development stage, “freeze” the specification, permitting no further modifications without a return to the start of the process. Schedule planned future improvements as a separate project(s).	Low	High
2	Implement a standard product specification document, incorporating objective criteria for subsequent assessment.	Low	High/Medium
3	Integrate representation of the ASDA Merchandising and Ranging functions into the Product (Brand) Panel to ensure that shelf-space availability is considered early in the NPD process.	Low	High/Medium
4	Update the standard Bullseye process to accommodate the “Supplier Technology-Push” (STP) route for the improved scheduling, control and predictability of these types of project.	Low	Medium
5	Develop a roster of authorised laboratories for microbiological and nutritional information tests, and permit private-label suppliers to contract directly with these to alleviate the Lawlabs capacity constraint.	Low	Low
6	Reduce to the vital few the number of formal attendees at each of the remaining decision gates to reduce resource, diary contentions and hence delays.	Medium	Medium
7	Fully train each [remaining] decision gate attendees to ensure they are qualified to assess against the requisite criteria [established via 2.] for that gate.	Medium	Medium
8	Reduce the number of formal decision gates designed into the Bullseye process (via their elimination or integration) in order to expedite workflow through the process.	Medium	Medium
9	Eliminate the Key Moment mechanism by allowing more frequent (weekly, bi-weekly or monthly) launch dates to reduce development and launch batch sizes, further improve workflow and reduce the number of obsolete event-specific new products that miss their launch window.	High	High
10	As process stability and control returns, reduce the inviolate ten week Packaging Development lead-time and reinstate the concurrent Pack Copy and Design stages for a reduced total process lead-time.	High	High

With this caveat in mind, the 52% Bullseye private-label failure rate found in this study is in marked contrast to the apocryphical 90%–95% FMCG failure rates reported by Cooper (1994) and prophesied in Ernst & Young LLB/Progressive Grocer (1997). It also contravenes the findings of the EPI project (Ernst & Young/ACNielsen, 1999a); either the failure rate is significantly lower than EPI and/or the Bullseye portfolio was composed of more highly innovative product concepts than attributed to private-label by that study. It is therefore concluded that either (a) 90%–95% failure rates in the FMCG industry *are* folklore (b) private label success rates are generally better than those for branded products or (c) retailer aspiration of private-label success is generally lower than manufacturer aspiration of success for its branded products, as reflected in their respective measurement criteria.

There is clearly a need to conduct future research to clarify these points. There is also a need to validate NPD performance levels within the UK FMCG industry more generally, including the issue of fully developed but un-launched products. However, the immediate future research will be to complete the two remaining phases of the SANPD project. First, a baseline performance questionnaire will be created and sent to the SANPD group to establish NPD performance at the individual project level of granularity. Analysis of the resultant data along with the findings reported in this paper will be used to confirm the factors that most strongly influence this performance level and hence redesigned the Bullseye NPD process accordingly. This will then be rolled out to the ASDA private-label supply base and studied longitudinally.

Appendix

APPENDIX A - DETAILED 'FUZZY' FRONT END OF AN ASDA SUPPLIER NPD PROCESS:	
	<p>PHASE 1 - PRODUCT BRIEF Normal = 2-3 wks Best = 1 wk Worse = 3wks £Cost = 40%</p> <p>PHASE 2 - ACTUAL PRODUCT DEVELOPMENT Normal = 2-3 wks Best = 2 wk Worse = 8wks £Cost = 50%</p>
TRADING / ASDA	<p>Normal elapsed hours = 240 VA hours (%) = 5.3 (2.2%) NNVA hours (%) = 3.6 (1.5%) NVA hours (%) = 231.1 (96.3%)</p> <p>Normal elapsed hours = 240 VA hours (%) = 2.4 (1%) NNVA hours (%) = 1.9 (0.8%) NVA hours (%) = 95.7 (98.2%)</p>
TECHNICAL / ASDA	
LEGAL / ASDA	
NPD / ASDA	<p>PRODUCT BRIEF BI-01</p> <p>AVG 3 X ITERATION</p> <p>NO = 95%</p> <p>AVG 4 X ITERATION NO = 100%</p>
CHEFS / ASDA	
NPD / Supplier A	<p>INTERNAL REVIEW OF BRIEF</p> <p>INTERNAL PRODUCT BRIEF</p> <p>UPDATE SYSTEMS</p> <p>SIGN-OFF PRODUCT BRIEF?</p> <p>NO = 15-20%</p> <p>YES = 80%</p> <p>MAKE A (PHYSICAL) SAMPLE</p> <p>KILL, 20%</p> <p>GOOD ENOUGH/ BRIEF MEY?</p> <p>YES = 0%</p> <p>FIRST PRODUCT SUBMISSION TO ASDA</p> <p>PANEL MEETING</p>
COMMERCIAL / Supplier A	
PURCHASING / Supplier A	<p>SIGN-OFF PRODUCT BRIEF?</p> <p>YES = 60%</p> <p>UPDATE SYSTEMS</p> <p>SIGN-OFF PRODUCT BRIEF?</p> <p>NO = 80%</p> <p>YES = 20%</p> <p>CAPEX REQUIRED?</p> <p>NO = 80%</p> <p>YES = 90%</p> <p>ESTABLISH SUPPLIER LEAD TIMES</p>
PRODUCTION / Supplier A	
FINANCE / Supplier A	<p>SIGN-OFF PRODUCT BRIEF?</p> <p>ASAPRE COSTING (INTERNAL)</p>

NOTE: THIS DATA HAS BEEN ANONYMISED

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