DESTROYER

CREATOR

Is Your **New Product Development Process**

Creating Or Slowly Erasing Your Business?

THE OPPORTUNITY

Income levels in India are rising and are expected to almost triple by 2025. India is likely to climb from its position of 12th largest consumer market in 2007 to the world's fifth largest market by 2025. Higher income levels and large proportion of new consumers (including working women) are radically changing spending patterns of Indians from basic necessities to better products and services.

The sheer volume of consumers coupled with improving buying power presents huge opportunities for businesses to grow profitably.

The customers in India hail from a multitude of cultures and backgrounds and are highly cost conscious; always looking for better "value for money". Many factors which arise as a combination of environmental, infrastructural and cultural influences make India and other emerging markets unique.

NEW PRODUCT DEVELOPMENT (NPD) PROCESS

The Weak Link

Though most businesses try to understand changing customer attitudes, desires and behaviours through market surveys, gut or attempting to sell established products of other markets with/without tweaks, the understanding does not get reflected in the success of the new products and services launched. Though

The Weak Link

most companies that develop new products have a NPD process, such process fails to deliver products and services which would create an expected market success as envisaged. In the Indian context, there are several examples of products that did not make a mark due to either lack of understanding of the customers, their requirements and preferences or the inability to convert the understanding into winning products. These include not-so-successful launch of iPhone in India, D'Tach toothbrush, Depend (adult diapers), Top Ramen Smoodles, Kellogg's Corn Flakes' initial launch, Ford Escort to name a few.

According to a leading market research firm, about *75% of FMCG and retail products fail to earn even $7.5 million during their first year.*

Striking the 'sweet spot' right is as critical as the first strike. A successful launch of a product in a new market would ensure that your organization takes the leadership position and have got the consumer reasonably engaged with your product/service. This is very important for products which customers would generally adopt for long term if they like them and possibly do not try again if they don't like them in the initial attempt e.g., personal care, cosmetics, foods. Even if the consumer gives you an opportunity to correct the mistake, a failed first attempt could make the competition aware of the opportunity being attempted by you. In such a scenario, the speed of the next 'right' strike will determine the leadership probability. However, if the competition is not up to the mark for the new market opportunity, you would still get another clear shot.

The key to the first and 'right' strike lies in a robust, effective, lean and customer-oriented New Product

Development (NPD) Process. Though most organizations realize its importance, very few organizations have really paid enough attention to make their NPD process world class.

You may have a quick assessment of your NPD process maturity with the parameters as shown in *Table 1*.

If most of your responses are on the right side, likely that you don't have much to worry about. However, responses other than in the top two boxes require urgent attention irrespective of their count.

A weak NPD process is more likely to deliver products/ services which would fail to meet customer as well as organizational requirements and expectations. Contrary to the intended objectives, this could actually erode value and brand equity of the business, sometimes instantly. Such events repeated over time could lead an organization to oblivion or be a marginal player. Yamaha in India is an example of losing out due to repeated failures in product launches. Once having a youth icon in

RX100, Yamaha was struggling and seems to be back on the growth track off late.

Organizations with a weak NPD process face various challenges across the development process and would demonstrate some or more of the following characteristics:

INEFFICIENT NPD PORTFOLIO
Improper Mix Of New Products Under Development

Any business needs to manage both short term and long term in order to sustain. This requires products/solutions to be developed to serve today's market and be future ready/ create the market of the future. What proportion of your new products under development are 'Innovation' and 'Renovation' type? The fact for most organizations is that their pipeline is generally full with 'Renovation' projects – tweaking and making marginal changes to existing products. If your organization's focus is largely on improving current offerings rather than creating

S.No	ITEM	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1	Our organization has a well-defined stage gate process which is followed every time for new product development					
2	At any time, we have a good mix of idea pipeline for seizing short term and long term opportunities					
3	Resources – both people (cross-functional) and money – are allocated to ensure projects are completed effectively and on time					
4	We create structured and scientifically designed sampling plans and questionnaires to ensure "right and unbiased" market / potential customer feedback across multiple stages of the NPD process					
5	We have scientifically established reliability charts for product failures and warranty claims / scientifically established service levels for service based products					
6	We have infrastructure to carry out reliability and accelerated life tests, simulating usage conditions which are at least as rigorous as real life conditions					

Table 1: *Assess your NPD Process Maturity*

'new' solutions, it is very likely to put pressure on your organization in the future. This pressure could come from outside the industry (e.g., Cell phone : Digicam) as well as

Left: *Renovation – Variants of the same product*

Right: *Innovation – Creating new products*

from an innovation focussed industry competitor (e.g., Samsung : Nokia). Any organization can build a pipeline of 'Innovation' products through adopting structured innovation methodologies. Such methodologies also help you create a far more effective/ superior pipeline of 'Renovation' products.

Do you have a structured innovation process in your organization?

'EARLY BIRD' SYNDROME
The Race To Place The Product On The Shelf First

Though delivering new products faster is definitely desirable, over-speeding without proper control might not be. In the race to somehow be the first in the market, an organization is most likely to skip/overlook some critical aspects if the NPD process is not lean enough.

"The speed of new product introduction is very critical. Even more critical is that the new products exceed customer expectations."

- Dr. Venkat Krishnan
Chief Scientist
ITC Personal Care Products

Shortcuts being taken, lack of attention to detail, missing validation checks, ignoring early warning signals and sometimes missing the big picture completely are some of your radar signals to detect over-speeding. A robust NPD process will ensure that the process right from understanding VOC till launch is aligned and followed even for existing product introduction into new markets.

An agri-machinery manufacturer became aware of a new product under development by one of its competitors for an underserved market segment in India. To be ahead of the competitor, this company quickly launched one its highly successful products from the European market in India. Though the product was well received at launch, the organization received a huge shock when majority of the equipment failed within the warranty period. After analysing the reasons, it was understood that the average run hours per year in India were very high as compared to the European market. The company realized that it should have made suitable improvements in the design before launching the product in India.

RESOURCE MYOPIA
Design (R&D) Personnel Are The Only Resources

We see designers struggling to get critical information and data, stuck due to delayed decision making by key stakeholders, change in briefs mid-way, all of which lead to delayed releases or last minute shortcuts. We observe several times that S&M is generally not represented on

the cross-functional team, though it is one of the most critical functions that can pick up the distortion in the customers voice, as we get deeper into the design/ manufacturing. The other functions typically get engaged later in the development lifecycle and hence are many times not considered critical at the time

The desired cross-functional team

of cross-functional team formation. This leads to the whole responsibility of the development falling on the

"One of the factors that we have experienced for a successful and fast NPD process is a true cross functional team. This enables quick information flow, faster decision making and creates a larger sense of belonging. Hence, we ensure that S&M, Engineering, Legal, Procurement and Production have representation on the team apart from R&D for NPD projects."

- Mr R Satyanarayan
Sr. General Manager (Technical)
Sudarshan Chemical Industries

shoulders of the design team. The NPD process tends to significantly suffer due to the silo approach to design with functional boundaries maintained and design continuing to be the job of the design department. Involving relevant functions right through the duration of the project brings in a lot of benefits through timely information, higher engagement, and larger ownership of the results.

Are your NPD teams really cross-functional or largely comprised of R&D personnel?

While working on a new Packaging design project with one of our FMCG clients, a cross-functional team representing Packaging Design, S&M, Projects, Sourcing and Quality was formed. The objective was to increase the packing speed with the existing infrastructure. During evaluation of the multiple packaging concepts generated, the member from the Projects team highlighted that none of the concepts would run at the desired higher speed in the existing technology. Based on his inputs, two of the concepts were slightly modified and one of them was further developed. Without the Projects team's representation, the packaging would have got designed, failing to meet the intended objectives. This would then have led to huge iteration effort thereby delaying the launch.

ONE WAY STREET
Ineffective Gates Across Phases

We have seen that many organizations miss out the opportunity to effectively utilize the reviews conducted during the NPD process. This is because these organizations treat such interventions as status reviews rather than Go/No-Go gates. A status review typically focuses on the team's progress against the plan and what needs to be done to speed up the progress. Status-review gate can be compared to an RFID Gate at the entry of a retail store. It detects and allows you to pass through even if you are taking a product out of the store

Example of two types of gates.
Left: *RFID Gate – detects and allows*
Right: *Turnstile Barrier – allows only authorised pass through*

without its sensormatic tag removed. There has to be a store person to intercept you in such a scenario.

An effective stage-gate NPD process would keep evaluating the very product idea as well as the concepts that get generated during the course of the product development apart from reviewing status. Such a process would work to ensure that not only the velocity of the process increases through elimination of cross-functional bottlenecks, but also the end result is first time right. This has additional benefits of resources being spent efficiently and effectively. Such a process can be compared to a Turnstile barrier, which will always allow only authorized pass through.

Does your organization 'kill' bad projects/concepts or does an idea once generated, get pursued till the end?
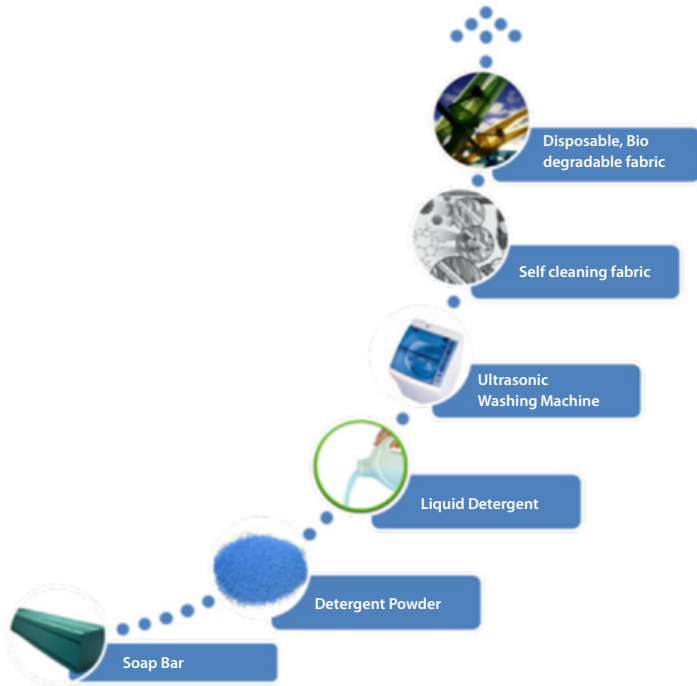
PRESUMPTION
The Key To The Future Lies In The Past

We have seen that past experience and personal set of beliefs get utilized to a large extent for developing new products. It does not mean that the knowledge from the past should be ignored. However, in a dynamically changing market, studies and experiences of a few years back might not be still relevant today. New technology, products and promotions keep shaping customer expectations. What was valid 2-3 years back might not stand to the same extent today. iPhone and BlackBerry have shaped the expectations of the phone user. Hence pre-iPhone launch expectations cannot continue to drive the future products.

Steve Jobs said, *"It's not the customer's job to know what they want."* True. But then, we need to know what all do the customers want. And it is not necessary that everyone has to create products without asking the customer. At the same time, a customer can most likely only tell you what he needs/wants. The solution, however, to meet those is in the hands of the designer. The customer does not tell you that the plane must have rigid wings to fly, the tiles must be 1'x1', 2'x2', 3'x3' to cover the floor, the laptop must be rectangular, and the page must be A4. If you anchor to the product past, you would get an incremental change. Hence Kodak would have continued to make a better film-based camera and not a digital camera if it looked at the past only. Detergents would continue to become better in cleaning more types of stains rather than a detergent free washing machine or

a fabric that does not need a detergent for cleaning. One of the potential techniques to help you create the future products today is **Trends of Evolution.**

Disposable, Bio degradable fabric

Self cleaning fabric

Ultrasonic Washing Machine

Liquid Detergent

Detergent Powder

Soap Bar

An Example of Trends of Evolution

Another challenge in the NPD process is that decisions based on past experience are rarely questioned as they fall in the common beliefs for even those who question. In fact, organizations get so ingrained in this judgemental thinking that they start believing they know what the customers want even when a new market is being targeted. *How often does your organization reach out to enough real consumers, where the sample size and questionnaire is scientifically designed, and the objective is to understand the real 'Job-to-be-done' rather than just 'what customers are asking for', before products/services start getting developed?*

A Brand Manager of skin care products saw an opportunity due to limited options available to the consumers in a category. Based on his brief a project was launched. Two months into the project, the Design Lead worked out the estimated financials based on the potential market size of the target segment. It turned out to be only INR 20 Cr per annum, which was too small for the organization. However, since the project was taken up and had already progressed, it continued on the development path. The calculation was only used to capture the financial benefits rather than to make decision on the further course of development. Available in the market, the product delivers insignificantly to the top line.

IMPROPER VOC CAPTURING PROCESS
Who Hears The 'Voice'? And Is It Only About The 'Voice'?

Most organizations have outsourced the execution of the most critical aspect of the NPD process i.e., capturing the Voice of the Customer (VOC). We have very often seen organizations rely on the results without being engaged in the VOC gathering process at all. The results of the exercise are directly used to provide inputs to the design process. The results are not validated for either sample selection or the process followed in capturing the VOC. A NPD process which does not listen to the real consumers is most likely not going to deliver products/services they want/need. If the inputs are not correct, the output is most likely going to be unsatisfactory. Well, sometimes you may get lucky.

KNOWLEDGESCAPE

More often than not, when a process is put in place for a certain objective, the objective is forgotten over time and the process starts ruling. The same happens with the VOC process. The consumer interview process was designed with the objective of understanding the

> *"Consumer & customer insights are essential before start of any new product development. Well defined insights make for sharp targets which if backed by robust innovation process inevitably results in great designs, implemented right first time and turned around with considerable speed."*
>
> *- Mr Atul Bhatia*
> *Executive Director - Science & Technology Cadbury India*

customer requirements when not many organizations were asking their customers. Hence, continuing to go to the customer and asking the same things might not be necessarily enough, though essential as the requirements might have changed.

The unstated needs of the customers are possibly more significant in today's scenario when almost everyone is trying to capture the stated needs. The overall objective still remains the same – understand customer needs to make better and successful products, but the process needs to be changed in today's context. This means you need to understand other than the intended purposes, how the product is typically used, what are the unorthodox uses the product is being put to and hence, make the product/service easier to use as well as cater to

more needs than it is intended to do.

Imagine you are trying to squeeze out some shampoo from the bottle when the quantity has almost reached the end. *How would you feel squeezing, waiting and also shaking the bottle for the shampoo to trickle down into your palm?* Those seconds might feel like hours. *What if all shampoo bottles had the cap side as the base or at least caps were made flat enough for the bottle to be kept that way?*

Now think of some examples of using products for purposes they are not meant for. Have you ever used a soft drink to clean scale off sinks and toilets, Playstation as a DVD player, toothpaste for skin burns, fork used as

Examples of unorthodox use of products
Left: *Cell phone screen used as vanity mirror*
Right: *Washing machine used as Lassi maker*

a knife, cling film as remote control cover, cooking oil as moisturiser for dry skin, etc?

The key question you should ask is, *"Who will take the responsibility of capturing more than just the voice? Should this be completely outsourced?"*

In one of our engagements, we asked the client to validate some sample results of a MR study. The findings were unbelievable. In one instance, a 'regular' user was asked to show the bottle of the product the family used. It was unravelling to see that the bottle was a three year old pack. If such 'regular' users are used to design products, one can imagine the fate of the product in the market. It would have been rather more useful for the organisation to understand from the same user, but considering him as a 'former' user rather than a 'regular' one. In yet another case, it was found that it was the wife's voice that was heard for a men's product during the survey as the husband was not at home at the time.

GUNNING FOR A USP
And That, Becomes The Only Objective

Sometimes the team gets too focused on the 'differentiators' that the basic needs of the customer get overlooked. How many times have you been disappointed to watch a movie with a great USP hype? What you see in some Bollywood movies (huge effort and investment on the USP but poor basics – script e.g., Drona, Blue, Sawariya, Love Story 2050, Kites, Players and the list goes on) also happens to products in organizations. The USP becomes so much of a focus that the core performance requirements/ product's usefulness gets compromised.

Take for instance, the smokeless cigarettes 'Premier' by RJ Reynolds. With concern over the dangers of smoking at fever pitch in the late '80s, tobacco giant RJ Reynolds set out to create a "cleaner" alternative. $325 million later,

smokeless cigarettes were born. The manufacturer's own CEO complained they tasted really bad. They were practically impossible to light. No doubt, these were pulled out from the market within four months. There are numerous examples of USP focused products that have

BlackBerry Playbook: *Designed to leverage the capabilities of the BlackBerry phone, but not able to cut ice as a standalone tablet.*

not done well in the market – Heinz EZ Squirt, Frito Lay WOW Potato Chips, Polar Coolcats fans to name a few.

As they say, "A chain is as strong as it's weakest link."

As a business leader, what are your plans to strengthen the weakest link?

THE PANACEA

Today organisations are identifying similar weaknesses and working on the macro NPD process on the lines of powerful methodologies such as Design for Six Sigma. At the same time, getting better simulation software for product testing /validation and working on incorporating structured innovative thinking into the process to enable the designers. Companies are also opening up to harness the power of open source innovation/ external collaboration to develop innovative products. **P&G's** *'connect + develop' (C+D)* **achieved its original goal in**

2005, with more than 50% of P&G innovation fuelled by external partnership. About $3 billion in annual sales at partner companies are driven by P&G-shared innovation.

WHAT IS DESIGN FOR SIX SIGMA (DFSS)

Design for Six Sigma (DFSS) can be defined as the act of designing a product, process or service resulting in a Six Sigma output (99.99967% compliance) that satisfies both external customer and internal business critical requirements. DFSS is a powerful structured methodology to take **Voice of Customer** as inputs and deliver a successful product/service as an output. Unlike conventional Six Sigma where DMAIC is a universally accepted methodology, DFSS does not have one standard methodology. Though there are many methodologies available like IDOV, CDOV, PIDOV, PICRV, DDOV to name a few; we recommend the **DMADV (Define – Measure – Analyse – Design & Optimize – Verify)** methodology for developing your new products and services. You may notice that in DMADV, "Design" does not appear until the fourth of the five phases. This is not accidental. In

DMADV, enough time is spent upfront making sure that customer and business needs are understood well so that products and services are designed to deliver as per expectations.

DFSS was designed with a vision to move from the current way of doing things to the right way of doing things. This would ensure that the quality was designed in rather than improving quality post launch as well as to avoid launch failures. This can be summarized as shown in the graph below.

THE DMADV METHODOLOGY

This five step methodology is designed to work take in customer inputs (VOC) and align all the downstream processes and actions in a structured way. The methodology gives a clear roadmap on how the New Product Development process should work. Each step of the roadmap has associated tools and techniques to deliver the intended outcome of the step. There are two ways in which you could use the DMADV methodology to align your NPD process. Map your NPD process first and compare it to the steps of DMADV. Identify the gaps that

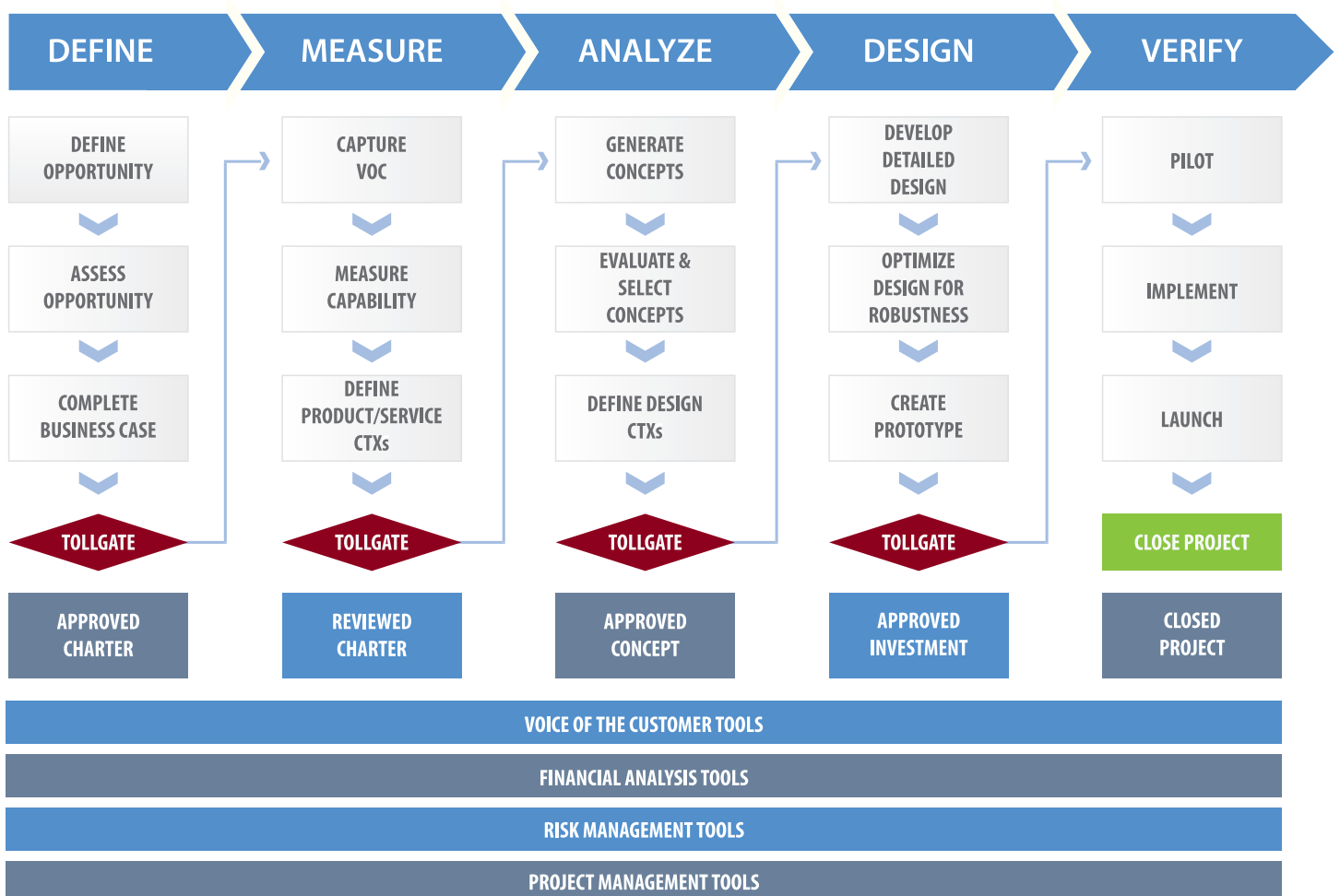| FROM	TO
REACTING TO POOR PRODUCT QUALITY	PROACTIVE PREDICTIONS OF PRODUCT QUALITY
SPECIFICATION CHANGE AND SCOPE CREEP	VOC DOCUMENTED CLEARLY AND EARLY
CRISIS MANAGEMENT	REQUIREMENTS MANAGEMENT
QUALITY BY INSPECTION	QUALITY BY DESIGN
BAD PROJECTS NEVER DIE	BAD PROJECTS ARE KILLED EARLY

The Vision of DFSS

exist in your current NPD process and plug them. Once this is done, write down the various tools and techniques which are recommended for use during each step of your

> *"Based on my experience, structured methodology like DFSS ensures that the NPD process delivers the desired quality product, first time right with a much shorter lead time, free from iterations."*
>
> *- Dr. Venkat Krishnan*
>   *Chief Scientist*
>   *ITC Personal Care Products*

current NPD process. Mostly we have seen that a process and the steps exist, but the '**hows**' are missing. Identify the potential tools and techniques that you can take from DFSS and add to your list to strengthen the toolbox. To this recipe, add a dash of practical Innovation tools rather than mere creative thinking techniques and enjoy the delicacy. *Doing this will ensure that your NPD process is well aligned as per the DMADV methodology and with the requisite skills of usage of the concepts, tools and techniques, your designers are now ready to consistently deliver winning products that will delight your customers.*

DEFINE	MEASURE	ANALYZE	DESIGN	VERIFY
DEFINE OPPORTUNITY	CAPTURE VOC	GENERATE CONCEPTS	DEVELOP DETAILED DESIGN	PILOT
ASSESS OPPORTUNITY	MEASURE CAPABILITY	EVALUATE & SELECT CONCEPTS	OPTIMIZE DESIGN FOR ROBUSTNESS	IMPLEMENT
COMPLETE BUSINESS CASE	DEFINE PRODUCT/SERVICE CTXs	DEFINE DESIGN CTXs	CREATE PROTOTYPE	LAUNCH
TOLLGATE	TOLLGATE	TOLLGATE	TOLLGATE	CLOSE PROJECT
APPROVED CHARTER	REVIEWED CHARTER	APPROVED CONCEPT	APPROVED INVESTMENT	CLOSED PROJECT

VOICE OF THE CUSTOMER TOOLS
FINANCIAL ANALYSIS TOOLS
RISK MANAGEMENT TOOLS
PROJECT MANAGEMENT TOOLS

The DMADV Roadmap for NPD

Breakthrough Management Group International (BMGI), a global consulting firm with a **strong focus on delivering results**, partners with organizations in various stages of their business life cycle to **transform** their **business performance**. BMGI is recognized as the world leader in harnessing the power of cutting edge techniques in the area of *Innovation*, *Strategy*, *Problem Solving* and *Business Transformation* for achieving tangible business results. BMGI enables businesses drive growth and improve profitability.
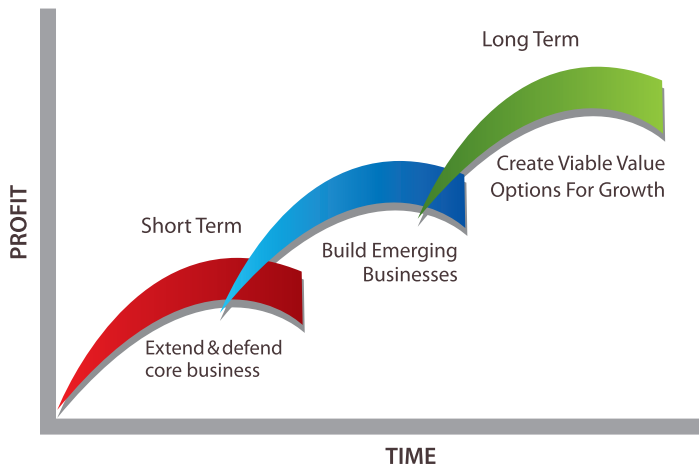
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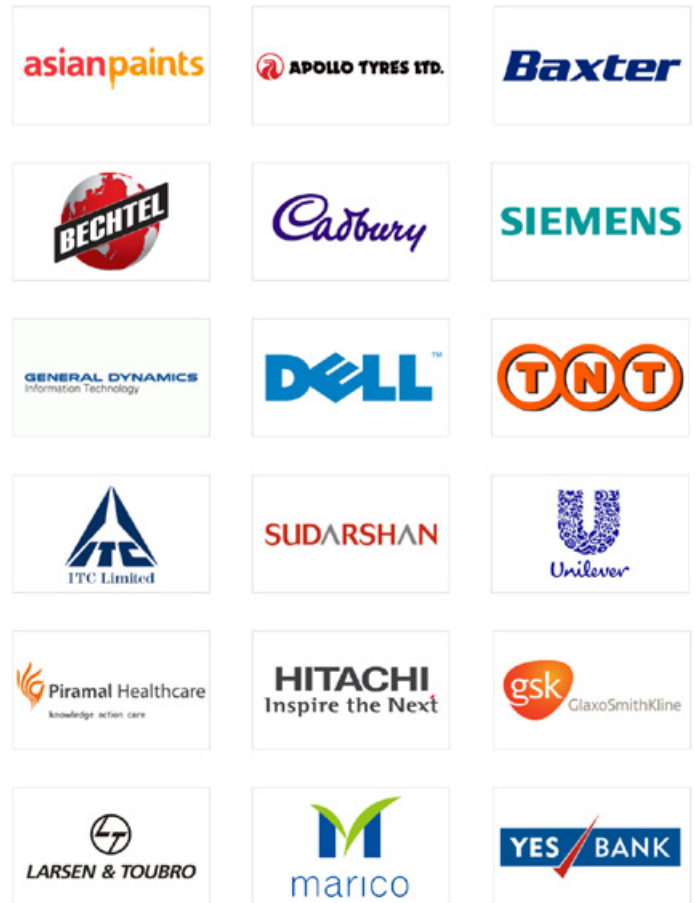
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