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Design Thinking

1. Overview

Design thinking is the new buzzword among the enterprise community today, and it is fast gaining popularity among the MNCs and SMEs. Roger Martin, Dean of Rotman School of Management defines design thinking as “an approach to business management that reframes the business through the eye of user and reworks business processes to deliver human-centric solutions, products and services”. He also argues that “business people today need to think like designers”.

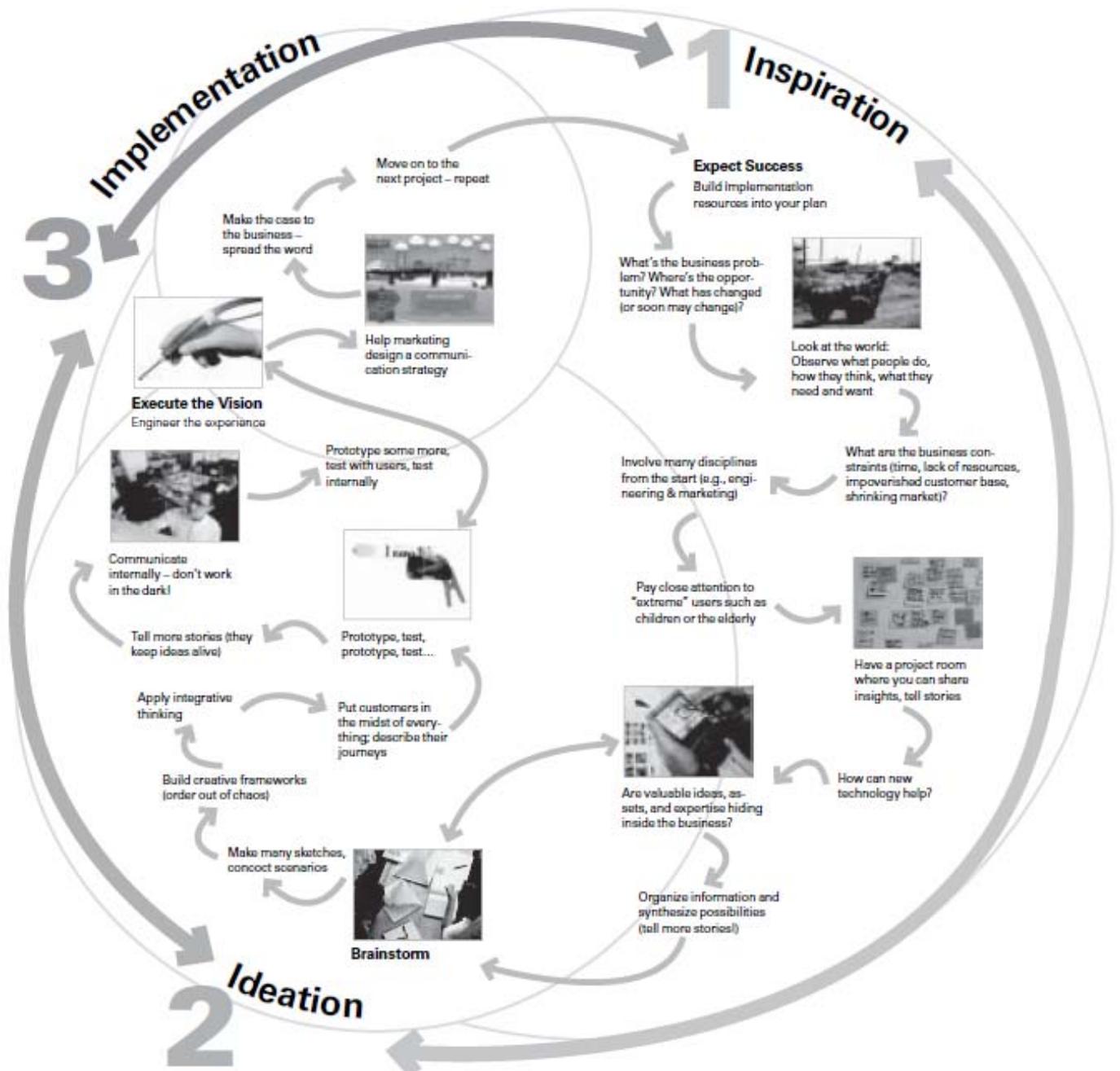
2. What is Design Thinking?

Design thinking is currently one of the “trendiest ways” for organisational leaders to revamp their entire business model, particularly in improving structure and processes, jumpstart business innovation and creating competitive advantage for their companies. Design thinking is an innovation process that uses the designer's sensibility to find unmet needs and opportunities in order to create new solutions that matter to people. It involves balancing the brain (analytical thinking) and the heart (intuitive, creative instinct). It is also a problem solving methodology employed by designers to create the “next big thing”, such as future products, services and even experiences. A successful design thinker would research their consumers, collaborate with them, experiment and prototype, analyse and strategise (business-wise) and communicate their concepts visually.

Hence, design thinking is a methodology that enables innovation. It does this by;

- Supporting the build-up of ideas and outside-the-box thinking
- Taking risks at early stages
- Eliminating fear of failure
- Deeply understanding the customers and their goals, behaviours, and attitudes
- Testing ideas early to gain immediate feedback
- Challenging a product or service's usability, feasibility and perceived value

3. Three Spaces of Innovation



Source: Brown, T. (June 2008). Design thinking. *Harvard Business Review*. Retrieved November 1, 2010, from <http://www.unusualeading.com/wp-content/uploads/2009/12/HBR-on-Design-Thinking.pdf>

In Tim Brown's article published in Harvard Business Review in June 2008, he highlighted that design projects should ultimately pass through three spaces – inspiration, ideation and implementation. He mentioned, "inspiration is for the circumstances (a problem, an opportunity or both) that motivate the search for solutions, ideation is for the process of generating, developing and testing ideas that may lead to solutions and implementation for the charting of a path to market". Projects will loop back through these spaces, more often than once as ideas are refined and new directions taken.

Inspiration

Inspiration is the first and key stage for any creative processes. It begins with empathy, looking at people and seeing the world from their perspectives. Inspiration is the fuel for creativity and innovation. For the designers, the world is their source of inspiration. Hence, this justifies the need to spend more time in this phase. It is necessary to understand the environment to be able to discover the real opportunities and challenges that the culture has to offer.

The role of designers is to understand the users on multiple levels: cognitive, emotional and physical (what they feel, how they feel it, when they feel it, etc). Also, the environment where these experiences happen, the social and cultural level, in particular how groups act and interact between them.

Ideation

Ideation is essentially prototyping. Design is a constant process of learning, while design thinking proposes learning by prototyping. Prototyping does not necessarily need to be physical, but tangible. Prototypes have three main objectives in the design process, (i) inspiring – you design as you build, (ii) evolving ideas to make them better and (iii) validating the ideas, how good they are or how they work.

Implementation

Contrary to what we understand traditionally by this concept, implementation is the way we ensure that the products/services get to the market through engaging all the stakeholders in the process. A mechanism to help with this is storytelling. Tim Brown says that "the more powerfully and the best you can construct a story around the ideas; the better you communicate them to colleagues, users,

stakeholders, the more likely your ideas will succeed and become real products"

Implementation is not only at the end of the design process but also applicable at the beginning. Telling a story about the whole experience is a way to detect problems and opportunities. This makes the real scope of the design problem/opportunity clearer to scale and frame the problem. Storytelling connects the stakeholders with the spaces, tools, roles and processes. It helps to join the dots and brings people together and can be tangible, physical and experiential.

4. Benefits of Design Thinking

Design thinking approaches things more holistically, with more intuition and more of a human dimension. It involves taking risks and being more exploratory in creating something new and original. It also promotes innovation in processes, products and leadership and other ways to maintain a competitive niche. Thus, design thinking is a business advantage, and possesses the potential in bringing huge advantages in the marketplace for businesses of all shapes and sizes.

In his book entitled "The design of business: Why design thinking is the next competitive advantage", Roger Martin pointed out that "the design thinker enables the organisation to balance exploration and exploitation, invention of business and administration of business, and originality and mastery. Design thinking powers the design of business, the directed movement of a business through the knowledge funnel from mystery to heuristic to algorithm and then the utilisation of the resulting efficiencies to tackle the next mystery and the next and the next. The velocity of movement through the knowledge funnel, powered by design thinking, is the most powerful formula for competitive advantage in the twenty first century". According to a research done by the United Kingdom's Design Council and the Corporate Design Foundation, design thinking not only improves a company's stock performance, but also improves earnings, net income and cash flow.

5. Design Thinker's Personality Profile

Design thinkers need not necessarily be created only by design schools. Tim Brown highlighted that “many people outside professional design have a natural aptitude for design thinking, which the right development and experiences can unlock”.

Some of the characteristics to look for in design thinkers are:

- **Empathy**
Design thinkers need to possess empathy where they can imagine the world from multiple perspectives – clients, end users, and customers, both current and prospective. By taking a “people first” approach, design thinkers can imagine solutions that are inherently desirable and meet explicit or latent needs. Great design thinkers observe the world in minute detail, noticing things that others do not and using their insights to inspire innovation.
- **Integrative thinking**
Design thinkers need not only rely on analytical processes, but also exhibit the ability to see all of the salient (though sometimes contradictory) aspects of a confounding problem and create novel solutions that go beyond and dramatically improve on existing alternatives.
- **Optimism**
Design thinkers have the tendency to assume that there is at least one potential solution that is better than the existing alternatives, no matter how challenging the constraints of a given problem may be.
- **Experimentalism**
Significant innovations do not come from incremental tweaks. Design thinkers need to pose questions and explore constraints in creative ways that proceed in entirely new directions.
- **Collaboration**
With the increasing complexity of products and services, it is crucial for design thinkers to collaborate.

6. Seven Stages of Design Thinking Process

Although design is usually subject to one's personal taste and preference, design thinkers share a common set of values that drive innovation. These values are mainly creativity, ambidextrous thinking, teamwork, end-user focus and curiosity.

Design thinking is:

- **Collaborative**, especially with others having different and complimentary experience, to generate better work and form agreement
- **Abductive**, inventing new options to find new and better solutions to new problems
- **Experimental**, building prototypes and posing hypotheses, testing them, and iterating this activity to find what works and what doesn't work to manage risk
- **Personal**, considering the unique context of each problem and the people involved
- **Integrative**, perceiving an entire system and its linkages
- **Interpretive**, devising how to frame the problem and judge the possible solutions

The design thinking process comprises seven stages, where problems can be framed, the right questions can be raised, more ideas can be created, and the best answers can be chosen. These seven steps are not necessarily linear. They can occur simultaneously and can also be repeated.

The table below presents the seven stages of the design thinking process.

1. Define

- Decide on what issue you are trying to resolve
- Agree on who the audience is
- Prioritise the project in terms of urgency
- Determine what will make the project successful
- Establish a glossary of terms

2. Research

- Review the history of the issue, remember any existing obstacles
- Collect examples of other attempts to solve the same issue
- Note the project supporters, investors, and critics
- Talk to your end-users, that brings you the most fruitful ideas for later design
- Take into account thought leaders' opinions

3. Ideate

- Identify the needs and motivations of your end-users
- Generate as many ideas as possible to serve these identified needs
- Log your brainstorming session
- Do not judge or debate ideas
- During brainstorming, have one conversation at a time

4. Prototype

- Combine, expand and refine ideas
- Create multiple drafts
- Seek feedback from a diverse group of people, including end-users
- Present a selection of ideas to the client
- Reserve judgement and maintain neutrality

5. Select

- Review the objective
- Set aside emotion and ownership of ideas
- Avoid consensus thinking
- Keep in mind that the most practical solution is not always the best
- Select the powerful ideas

6. Implement

- Make task descriptions
- Plan tasks
- Determine resources
- Assign tasks
- Execute
- Deliver to client

7. Learn

- Gather feedback from the consumer
- Determine if the solution met its goals
- Discuss what could be improved
- Measure success, collect data
- Document

Case Studies

STIKFAS Design

Toy Production and the Singapore Dilemma

The global toy industry is said to be “highly fluid and often a fragile industry”. Every year, toy producers are faced with issues such as:

- maturation of products and the consequent need for annual versioning to keep momentum and to maintain toy portfolios across generations
- retailers’ seasonal discounting to attract customers, which hurts toymakers
- new merchandising themes driven by movies and other media

In recent years, there is also a significant slump in sales of traditional products. Stiff competition from video and interactive games were also experienced since 2006. Meanwhile, cost is also likely to be a major challenge for Japan and the US, as both countries are also experiencing declining margins due to the impact of low-cost Chinese manufacturing. Hence, the designers and producers in the region are faced with considerable challenges in making their presence felt. Among the dilemmas faced are moving the design centres that have traditionally been located in the US and Japan. Additionally, the recent years have seen Hong Kong developing a formidable presence based on their local design skills, in concert with China’s vast low cost manufacturing.

The STIKFAS Story

STIKFAS started from a brief concept sketched by founder, Ban Y J in his sketchbook. Established in 2001, STIKFAS is now the brand that has defined a new genre in toys, producing interchangeable action figures. The company’s first break was its collaboration with Electronic Arts (EA). STIKFAS’ prototype of the very first Alpha Male had caught their attention, which resulted an order for 15,000 pieces of the action figure, which were bundled with its game package. The toy was snapped up within two weeks of the game’s release in mid-2001.

Later, STIKFAS independently produced Alpha Male which were sold on their online website. Knowing that it would be tough for a small company to be global, STIKFAS decided to ride on a well-known brand. In 2002, the company entered into

a licensing arrangement with Hasbro, a major US toy designer and manufacturer, to distribute STIKFAS worldwide. By 2004, STIKFAS had grown such that they could now manufacture and distribute independently, although their partnership with Hasbro was retained. Today, STIKFAS is sold in over 20 countries worldwide, with over 70 STIKFAS products and toys.

Building a Brand

STIKFAS believes that the process of building a brand involves thinking like a customer. Branding, to them, is about a promise that the brand should deliver to the consumer, from the products to the service. This further emphasises that one should always think like a consumer.

The toy and game manufacturing is a major industry sector, where yearly iterations, gimmicks and add-ons are made to products to attract buyers' attention. Among the several challenges faced by start-ups are creating a brand that is strongly differentiated in what is an immensely crowded marketplace, the strong distribution networks and sizable advertising budgets of major players, and the need to identify a product that can span the seasons and the generations, has staying power and is able to develop loyalty with customers.

Differentiation and the Value Proposition: Brand Reinforcement

The toy and game market is "immensely crowded" with producers using an array of tactics to promote their products. Producers also tend to use highly colourful and busy packaging design. Hence, STIKFAS differentiates itself by presenting customers with a very simple and clean image. Its white box is easily identifiable, and ensures that "STIKFAS motto of "simply fun" image is applied consistently to its products, the action figures, their web home page, and to their packaging. The slogan "It's simply fun" not only is a direct message of the product's fun value, but also a connotation of the company's approach in deriving fun value through simple approaches. All in reinforcing the brand".



Source: Case study: Stikfas. (n.d.). Retrieved November 1, 2010, from <https://www.designsingapore.org/pdf/Stikfas%20Design%20Casestudy.pdf>

However, simplicity does not mean cheapness. While competitors' packagings are often disposed of when the toys are opened, STIKFAS enhances customer value by encouraging their customer to keep its packaging, rather than throwing it away. The white STIKFAS box is sturdy, and has a multitude of uses, from storage to using it as a pencil case. Within the box, the wrapping for the figures is currently using a re-usable zip lock bag, while the instruction sheet is in fact a set of STIKFAS postcards, which are also collectibles.

STIKFAS also ensures that every encounter with customer should reinforce the value of the brand. The company believes that brand reinforcement is economic sense as it shows "how to make the dollar go further". Although STIKFAS' packaging alone often runs at near 40% of manufacturing costs, it is considered an investment in brand.

The Design Process

Design Concept and the Ten Commandments

Ban's expertise in designing comes from his life long interest in "tinkering". He had an addiction in building toy models as a child, and was able to take apart and re-assemble household electronic devices. Ban had pursued a year of studying at a formal design school, before leaving to work in a local design house. He felt that the emphasis on theory did not suit his inquisitive temperament.

At STIKFAS, Ban has a (figurative) set of laws for the designs, and drew up his own "ten commandments", which his designers are expected to assimilate and manifest in each STIKFAS design. For him, however, laws are immutable and rules are meant to be broken. The ten commandments suggest a holistic view of design that incorporates strong aesthetics, understanding of the craft and marketing. STIKFAS' ten commandments include ensuring products are to be designed

as simple as possible, and incorporating a distinguishing element that stands out in the product that people will remember.

The Design Process

Precision engineering ensures consistency in the standard “ball and socket” design, which is a unique and key element of all STIKFAS products. The unique “silhouette” of STIKFAS designs further supports this. At STIKFAS, the designing process goes through 4 key stages, (i) design and thought process, (ii) line drawings, (iii) 3D rendering and virtual simulation and (iv) tooling and production.

This holistic view of design is reflected in the STIKFAS product development cycle. The team drives the business decisions, where ideas are brainstormed and shared with the team every Wednesday. Line drawings are the first step in the design process after the initial idea. At this stage, designers should have already considered any limitations of the product designs. New designs are drawn using Auto-Cad and 3D rendered. The problems of joint incompatibilities and other possible problems are solved during the software phase through software simulations. Engineers would also give their inputs and suggest ideas to improve and make tooling more efficient. The final stage in the design process is where tooling and production of the action figure begins. Only minor adjustments are made after the first test shot is produced.

Test tooling takes approximately 45 days to complete. New staff are required to spend at least two to three months understudying and working together with the tooling engineers to understand how products are made, thus impacting on how they are designed. This would allow them to design products that perform, and steer them towards a process that can generate products which meet STIKFAS standards and quality requirements. The lead-time from design to sales takes a minimum of three months on average.

Manufacturing

Most of the manufacturing is outsourced to a specialist toy manufacturer in China. By outsourcing, STIKFAS is able to capitalise on the Chinese expertise in toy manufacturing as well as make use of the well-established transportation network to efficiently distribute to their overseas distributors.

STIKFAS handles the manufacturing function with a strict production schedule. Their Singapore office logistics staff communicates with their Chinese counterparts on a daily basis

to ensure their products are delivered on time to distributors. The only inventory that STIKFAS carries is for their online store at head quarters.

IP Management

STIKFAS was awarded the US Patent on the “ball and socket design” and is currently pursuing the Patent Cooperation Treaty (PCT) filing in various countries. To date, STIKFAS has obtained the STIKFAS trademark registration, STIKFAS design registration and STIKFAS copyright registration.

STIKFAS products have also been global since inception. They have the hallmarks of “universal” design with neutral characteristics, modular base allowing for ongoing invention (seasonal challenge) and convergence with sci-fi themed interactive gaming characters.

The Design Oriented Organisation

At STIKFAS, their culture reflects a strong personality of its founder and chairman. Two main elements that have contributed to the success of the organisation are smallness and learning by tinkering.

Smallness

The STIKFAS team comprises 12 people with each individual performing several duties. For Ban, he is convinced that “big organisations can quickly lose their vision and coherence”. His view is that even if the top management has a plan or vision, the idea normally stops at the middle management and not cascaded down to the rest of the team. When the company grows, he feels that people will lose the chemistry or x-factor, and their loyalty will shift, especially when sub-cultures are formed.

Learning by Tinkering

Applying the talents of existing staff generally solves the new challenges, which arise around the growth of the company. When a new function is required, creative people or graphic designers will be tasked to independently master the skill. At STIKFAS, e-commerce and supply chain, the management of the packaging of products, and website design are all done in house.

Eubiq

The Eubiq Story

The Singapore's consumer electronics market continues to grow over the years. This creates an opportunity for the power outlet makers, as they see the increasing need to create supporting accessories for these gadgets and appliances to meet the needs of today's technology-savvy consumers.

Mr Yong Choon, Chairman of Eubiq realised the limitations and the lack of flexibility and expandability to the current conventional power strip due to its structural design. The conventional power strip has been the only type of power outlet that can provide the additional power points. Thus, this inspired him to emulate alternative power outlets that would meet the demands of the rapid changing developments in consumer electronics. Not only being comparable in terms of safety, the new power outlets would also be comparable in flexibility and elegance.

The Design Oriented Organisation

Eubiq's vision is to become the world leader in the new generation of outlet system. Headquartered in Singapore, Eubiq was founded in 2000. In its initial years, the team at Eubiq had spent much effort in researching and steadily perfecting the systems, aggregating investments and designing ideas in the process. Eubiq's Chief Designer, also CEO of Eubiq, considers this "seeding" – investing into the future. In 2006, the company started a new plant in Singapore to meet the increasing global demand, and maintain its in-house R&D capability in order to facilitate customers' needs with shorter response time.

Eubiq's Design Philosophy

In today's modern buildings, electrical outlets are fixed onto the wall at the time of building, and provide its residents with its sources of electrical power. Eubiq believes that these outlets, however, "lack style and are likely to stick out like a sore thumb". This is especially so in any home interior design masterpieces, unless well hidden. They also highlighted that the conventional power outlet accessories such as extension cords and multi-plugs, which are invented to address the shortage of power outlets, are usually bulky and inflexible. They also contribute to short circuits when overloaded.

Thus, these factors motivated Mr Yong to develop a power outlet system, which is designed for users who are looking for

alternatives to messy and unsightly extension cords and power sockets. In their bid to transform how the world draws power, it is also crucial for Eubiq to design a product that meets global standards and at the same time, is adaptable to the needs of different profiles of consumers, ranging from residential, commercial to industrial. Additionally, it also had to design a power outlet system, which was highly flexible and could be easily customised to meet individual's needs, in order to meet the demands of the ever fast changing developments in technology. Hence, two key factors form the guiding principles for Eubiq's product design – flexibility and modularity.

GSS™ System: A Highly Flexible Power Outlet System

The Ground Sentry Shutter (GSS™) System was invented by Eubiq, with one of its key goals is to establish the system as an international standard. As such, the foundation of Eubiq's design is to build on the GSS™ System, and create different ranges of products to meet the needs of customers. The GSS™ System is a patented safety feature that incorporates a spring that acts as both a safety shutter and an earth wire, effectively grounding all conductive objects in contact with it, hence making it safe and user friendly. Once the system is recognised as a global platform, the company can then bring its products beyond the Singapore market.

Specifically, due to as many as 12 adaptors or 16 plugs can tap on a one-metre Eubiq Power Track, users no longer need to worry about unsightly wires trailing all over the place. Appliances and gadgets can now be slotted directly onto the track. The product has also undergone extensive testing and refined to ensure safety and can be handled by both the young and elderly. With the system's international compatibility, it is set to be well received globally.



Source: Eubiq: Design business case study. (n.d.). Retrieved November 1, 2010, from <http://www.designsingapore.org/pdf/Eubiq.pdf>

The Road to Design

During the entire design process, from conceptualising to manufacturing, to sales and finally utilisation, the adoption of design is a key consideration. Various areas were re-assessed and re-examined to keep the system as flexible as possible.

These include areas such as:

- strengths and weaknesses of the current system
- lifestyles of the 21st century masses
- needs and problems faced by architects and designers – to better understand feasibility of designs
- integration of products into living space
- production techniques
- business model for avenues, branding and reputation

Hence, taking into account the above considerations, the modular product design concept then promotes easy customisation to suit different markets and needs, and also possesses the flexibility for the creation of new products.

Eubiq's in-house team solely handles its design process. The dynamic and innovative team of graphic, animation and industrial designers and engineers not only creates innovative product design, but also provide customers with simulations to enable them to better visualise product designs and specifications. With Eubiq's commitment to embark on design right from a product's infancy stage, the company ensures that the design for each part of the products, from the small plastic studs to aluminium housing, is thoroughly considered. It is by producing these parts in-house that the company can then appreciate the implications of its design concept and is able to learn from their experiences. Also, it helps to ensure quality assurance of the end products.

As it continues to strive for product design excellence, Eubiq eventually set up a manufacturing plant at Joo Koon Crescent, which is also now its centre of excellence for design.

Design as Sustainable Business Strategy

Presently, competition in the power outlet systems industry, in particular in the GSS™ System, is still limited. However, as the product continues to gain popularity and recognition by the mass consumer market, increasing competition is expected. Thus, Eubiq has made efforts to ensure that design continues to be a sustainable business strategy, in order to continue to innovate and lead technological development in this industry.

Keeping the Ideas Flowing

Eubiq has adopted an inclusive strategy as part of its business model, rather than direct competition. They have adopted to work together and forming strategic alliances with key partners to research and develop new product ranges. This includes the installation of new applications for the GSS™ System. In this pursuit, Eubiq has embarked on its partnership plan with Panasonic for powering and planting of its Power Line Communication (PLC) technologies. Eubiq strongly believes that in design work, it is crucial to keep the ideas flowing. It is through such exchanges of ideas that the company is able to develop new ones, build on and improve on conventional concepts.

Articles can be retrieved from NLB's e-Resources – <http://eresources.nlb.gov.sg>

Books are available at the Lee Kong Chian Reference Library.

Recommended Readings

Ambrose, G., & Harris, P. (2010). *Design thinking*. Lausanne: AVA Academia.
[RART 741.6 AMB]

Berger, W. (2009). *Glimmer: How design can transform your life, and maybe even the world*. New York: Penguin Press.
[RART 745.2 BER]

Brown, T. (2009). *Change by design: How design thinking transforms organizations and inspires innovation*. New York: Harper Business.
[RBUS 658.4063 BRO]

Esslinger, H. (2009). *A fine line: How design strategies are shaping the future of business*. San Francisco: Jossey-Bass.
[RBUS 658.575 ESS]

Fry, T. (2009). *Design futuring: Sustainability, ethics and new practice*. Oxford: Berg.
[RART 745.2 FRY]

Gobé, M. (2007). *Brandjam: Humanizing brands through emotional design*. New York: Allworth Press.
[RART 741.6 GOB]

Lockwood, T. (2010). *Design thinking: Integrating innovation, customer experience and brand value*. New York: Allworth.
[RBUS 658.5752 DES]

Martin, R. (2009). *The design of business: Why design thinking is the next competitive advantage*. Boston: Harvard Business Press.
[RBUS 658.4063 MAR]

Myerson, J. (2001). *IDEO: Masters of innovation*. New York: teNeues.
[RART 745.2 MYE]

References

Barry, M., & Beckman, S. L. (2008, July/August). *Developing design thinking capabilities*. Retrieved November 1, 2010, from <http://www.stepinsidedesign.com/STEPMagazine/Article/28885/>

Business design. (n.d.). Retrieved November 1, 2010, from <http://www.rotman.utoronto.ca/businessdesign/default.aspx>

Brown, T. (June 2008). Design thinking. *Harvard Business Review*. Retrieved November 1, 2010, from <http://www.unusualeading.com/wp-content/uploads/2009/12/HBR-on-Design-Thinking.pdf>

Case study: Stikfas. (n.d.). Retrieved November 1, 2010, from <https://www.designsingapore.org/pdf/Stikfas%20Design%20Casestudy.pdf>

Design thinking: A design process for the development of innovations. (n.d.). Retrieved November 1, 2010, from <http://designthinking.iwi.unisg.ch/index.php?id=2>

Design thinking 101. Retrieved November 1, 2010, from <http://danielmckenzie.com/blog/2009/12/design-thinking-101/#axzz13KP6mZnl>

Design thinking 2.0: Enabling innovation with web 2.0 – Part 3. (2010). Retrieved November 1, 2010, from <http://vaughanmerlyn.com/2010/03/25/design-thinking-2-0-enabling-innovation-with-web-2-0-part-3/>

Eubiq: Design business case study. (n.d.). Retrieved November 1, 2010, from <http://www.designsingapore.org/pdf/Eubiq.pdf>

Intro to design thinking: An interview with David Burney conducted by Tim Hyer. (2006). Retrieved November 1, 2010, from <http://www.redhat.com/magazine/019may06/features/burney/>

Mourtada, R. (2010, May 6). Harness the power of design thinking. *The Globe and Mail*. Retrieved November 1, 2010, from <http://www.theglobeandmail.com/report-on-business/your-business/business-categories/innovation/harness-the-power-of-design-thinking/article1557500/>

National Library Board. (2010, October 25). *Design thinking: Applying a designer's problem-solving methodology to business innovation*. Retrieved November 1, 2010, from <http://libguides.nl.sg/designthinking>

Nine competitive advantages of design thinking for business. (2010). Retrieved November 1, 2010, from <http://compassioninpolitics.wordpress.com/2010/07/18/nine-competitive-advantages-of-design-thinking-for-business/>

Serrat, O. (2010, March). Design thinking. *Knowledge Solutions*. Retrieved November 1, 2010, from <http://www.adb.org/documents/information/knowledge-solutions/design-thinking.pdf>

Stikfas. (n.d.). Profile. Retrieved November 1, 2010, from <http://www.stikfas.com/profile.html>

The design of business: Why design thinking is the next competitive advantage. (2010, May 29). Retrieved November 2010, from <http://compassioninpolitics.wordpress.com/2010/05/29/the-design-of-business-why-design-thinking-is-the-next-competitive-advantage/>

Transformations powered by design thinking. (2009, November). Retrieved November 1, 2010, from http://apps.spring.gov.sg/SPRINGnews/2009_11/index2.html

What is design thinking?. (n.d.). Retrieved November 1, 2010, from http://noisebetweenstations.com/personal/weblogs/?page_id=1688

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At the Singapore Productivity Association, we recognise that there may be specific industries that face different sets of KPIs from others. As such, the course content for the CPP will be contextualized for these industries. Currently, we have developed a general CPP course that will be suitable for most industries, as well as the CPP (Retail), which we have contextualized specially just for the Retail sector. The course content can be found below:

CPP (General)	CPP (Retail)
<p>Module 1: Understanding Productivity (Duration: 1 day)</p> <ul style="list-style-type: none"> • Introduction to Productivity and Quality Concepts • Factors Affecting Enterprise Productivity • Productivity Movement in Singapore • Productivity Promotion in Companies • Productivity Challenges <p>Module 2: Productivity Tools, Techniques & Management Systems (Duration: 3 days)</p> <ul style="list-style-type: none"> • Business Excellence • Productivity Measurement & Analysis • Process management: <ul style="list-style-type: none"> ▪ Cost of Quality ▪ Lean Six Sigma ▪ Process Mapping & Analysis • Integrated Management Systems <p>Module 3: Innovation & Service Excellence (Duration: 3 days)</p> <ul style="list-style-type: none"> • Knowledge Economy & Innovation • Service Excellence • Team Excellence <p>Module 4: Critical Success Factors (Duration: 1 day)</p> <ul style="list-style-type: none"> • Management Commitment • Managing & Sustaining Change • Overcoming Resistance to Change • Training and Education • Planning for Implementation and Control of Productivity Improvement Programme • Briefing on project assignment & Role of Productivity Practitioner 	<p>Module 1: Understanding Productivity (Duration: 1 day)</p> <ul style="list-style-type: none"> • Introduction to Productivity and Quality Concepts • Factors Affecting Enterprise Productivity • Productivity Movement in Singapore • Productivity Promotion in Companies • Productivity Challenges <p>Module 2: Productivity Tools, Techniques & Management Systems (Duration: 3 days)</p> <ul style="list-style-type: none"> • Delivering Service Excellence • Productivity Measurement & Analysis • Process management: <ul style="list-style-type: none"> ▪ Cost of Quality ▪ Lean Six Sigma ▪ Process Mapping & Analysis <p>Module 3: Service Excellence & Sales Productivity (Duration: 3 days)</p> <ul style="list-style-type: none"> • Introduction to Service Excellence & Sales Productivity • Store Management & the Roles of a Store Manager • Minimising Operational Constraints & Focusing on Sales • Setting Goals & Analysing Statistics • Coaching & Motivating Sales Staff • Service Behaviours that Encourage Business <p>Module 4: Critical Success Factors (Duration: 1 day)</p> <ul style="list-style-type: none"> • Management Commitment • Managing & Sustaining Change • Overcoming Resistance to Change • Training and Education • Planning for Implementation and Control of Productivity Improvement Programme • Briefing on project assignment & Role of Productivity Practitioner

As part of the CPP curriculum, participants are required to implement a productivity improvement project upon completion of the in-class component. Project guidance will be provided by a professional consultant assigned for this purpose and is for a total of 2 man-days.

Funding & Payment

The course is supported by the Singapore Workforce Development Agency (WDA). Funding is available at 70% and 50% of the course fees respectively for SMEs and MNCs/LLEs/Statutory Boards. Please find the prices payable in the net fee table below:

For SMEs:	Net Fee	Nett Fee with GST
SPA Member (S\$3,700)	S\$1,110	S\$1,187.70
Non-Member (S\$3,950)	S\$1,185	S\$1,267.95
For MNCs/LLEs/Statutory Boards	Net Fee	Nett Fee with GST
SPA Member (S\$3,700)	S\$1850	S\$1979.50
Non-Member (S\$3,950)	S\$1975	S\$2113.25

**Funding applicable for up to 2 participants (Singaporeans/PRs only) from any single company.*

Course Schedule

The schedule for the first quarter of 2011 is appended below:

Run 4: CPP (Retail)		
Date	Module	Time
Tuesday, 11 January 2011	Module 1	9-5 pm
Thursday, 13 January 2011	Module 2	9-5 pm
Tuesday, 18 January 2011		9-5 pm
Thursday, 20 January 2011		9-5 pm
Tuesday, 25 January 2011		9-5 pm
Thursday, 27 January 2011	Module 3	9-5 pm
Tuesday, 1 February 2011		9-5 pm
Tuesday, 8 February 2011	Module 4	9-5 pm

Run 5: CPP (General)		
Date	Module	Time
Wednesday, 12 January 2011	Module 1	9-5 pm
Friday, 14 January 2011	Module 2	9-5 pm
Wednesday, 19 January 2011		9-5 pm
Friday, 21 January 2011	Module 3	9-5 pm
Wednesday, 26 January 2011		9-5 pm
Friday, 28 January 2011		9-5 pm
Wednesday, 9 February 2011	Module 4	9-5 pm
Friday, 11 February 2011		9-5 pm

Run 6: CPP (Retail)		
Date	Module	Time
Tuesday, 22 February 2011	Module 1	9-5 pm
Thursday, 24 February 2011	Module 2	9-5 pm
Tuesday, 1 March 2011		9-5 pm
Thursday, 3 March 2011	Module 3	9-5 pm
Tuesday, 15 March 2011		9-5 pm
Thursday, 17 March 2011		9-5 pm
Tuesday, 22 March 2011		9-5 pm
Thursday, 24 March 2011	Module 4	9-5 pm

Run 7: CPP (General)		
Date	Module	Time
Wednesday, 23 February 2011	Module 1	9-5 pm
Friday, 25 February 2011	Module 2	9-5 pm
Wednesday, 2 March 2011		9-5 pm
Friday, 4 March 2011	Module 3	9-5 pm
Wednesday, 9 March 2011		9-5 pm
Friday, 11 March 2011		9-5 pm
Wednesday, 16 March 2011		9-5 pm
Friday, 18 March 2011	Module 4	9-5 pm

Run 8: CPP (Retail)		
Date	Module	Time
Tuesday, 5 April 2011	Module 1	9-5 pm
Thursday, 7 April 2011	Module 2	9-5 pm
Tuesday, 12 April 2011		9-5 pm
Thursday, 14 April 2011		9-5 pm
Tuesday, 19 April 2011	Module 3	9-5 pm
Thursday, 21 April 2011		9-5 pm
Tuesday, 26 April 2011		9-5 pm
Thursday, 28 April 2011	Module 4	9-5 pm
8th Run (Target Participants - 25)		
Date	Module	Time
Wednesday, 30 March 2011	Module 1	9-5 pm
Friday, 1 April 2011	Module 2	9-5 pm
Wednesday, 6 April 2011		9-5 pm
Friday, 8 April 2011		9-5 pm
Wednesday, 13 April, 2011	Module 3	9-5 pm
Friday, 15 April 2011		9-5 pm
Wednesday, 20 April 2011		9-5 pm
Wednesday, 27 April 2011	Module 4	9-5 pm

Core Faculty Members

MR. WONG KAI HONG
MBA IN STRATEGIC MARKETING (HULL), BSC
(NUS)

Kai Hong is a business consultant, management trainer and company director. He has spent almost 2 decades in the consumer products industry, having worked with retailers like Isetan, Metro, Royal Sporting House, The Athlete's Foot and Sunglass Hut; brands like Reebok and Doc Martens; and technology group Wearnes Technology. He has been involved with various functions including operations, business development, project management, human resource, training, marketing, logistics, budgeting and general management. He has developed businesses in Singapore and many Asia cities such as Seoul and Beijing.

MR. LAM CHUN SEE
B. ENG IN INDUSTRIAL & SYSTEMS ENGINEERING
(UNIVERSITY OF SINGAPORE)

Chun see manages his own consultancy practice, Hoshin Consulting and is also an associate consultant/trainer to the PSB Corporation and Singapore Productivity Association. Prior to running his own practice, he has had years of experience as an industrial engineer with Philips, and trainer and consultant with the then National Productivity Board, APG Consulting and Teian Consulting. He was conferred the Triple-A Award in 1989 for helping to transfer Japanese know-how, particularly in the area of 5S, into local programmes and packages. Throughout his years of consultancy experience, Chun See has assisted many companies in analyzing their productivity and quality objectives and performance; primarily through the application of the PDCA technique and basic QC tools.

MR. LEE KOK SEONG
M.SC. IN CHEMICAL ENGINEERING (IMPERIAL
COLLEGE, LONDON UNIVERSITY), B.SC. IN
CHEMICAL ENGINEERING (NATIONAL TAIWAN
UNIVERSITY)

Kok Seong has accumulated vast experience in the areas of productivity training and management consultancy throughout his 30 years of experience with the Standards, Productivity and Innovation Board (SPRING). He has provided consultancy assistance and training for numerous organizations both within and outside of Singapore in the areas of Productivity Management, Operation and Production Management, total Quality Management, Total Productive Maintenance, Shopfloor Management, Occupational Safety Management, Industrial Engineering Applications and Supervisory Management. He has also been greatly involved in the pinnacle Singapore Quality Award (SQA) initiative since its inception in 1993. His track records include the assessments and site visits of award recipients like Micron Semiconductor (formerly Texas Instruments), Motorola, Baxter Healthcare, Philips Tuner Factory and Teck Wah Industrial Corporation Ltd. Mr. Lee is currently a certified SQA Senior Assessor, as well as a resource person for Basic and Advanced Training Courses for Productivity Practitioners, a position he has taken on since 2007.

MR. LOW CHOO TUCK

M.SC. IN INDUSTRIAL ADMINISTRATION (UNIVERSITY OF ASTON, UK); B.SC. IN PHYSICS (NUS); DIP IN QUALITY CONTROL INSTRUCTORS (INTERNATIONAL QUALITY CENTRE, NETHERLANDS); CERTIFICATE IN PRODUCTIVITY DEVELOPMENT (JAPAN PRODUCTIVITY CENTRE); CERTIFICATE IN ADVANCED MANAGEMENT DEVELOPMENT (INSEASD)

Choo Tuck currently provides training and advisory services in productivity and quality management to companies and government in the Asean region and Middle East. He was previously the Executive Director of the Restaurant Association of Singapore as well as the Singapore Productivity Association, and was also the Director for Strategic Planning in SPRING Singapore. During his many years of service with SPRING Singapore, he gained wide experience in productivity training, management consultancy and productivity promotion, and has helped more than a 100 companies in improving productivity, quality control and business excellence, including organizations such as Cycle & Carriage, Motorola, PUB and DBS. On top of that, he has also served as an Asian Productivity Organisation (APO) expert. On top of that, he has also served as an Asian Productivity Organisation (APO) expert on Productivity for several APO member countries, and was part of a team of experts engaged by the Singapore cooperation Enterprise to provide productivity expertise to the Government of Bahrain in 2007 and 2008.

MR. QUEK AIK TENG

B.ENG (HON.) IN MECHANICAL ENGINEERING (UNIVERSITY OF SHEFFIELD); DIP. IN BUSINESS EFFICIENCY (INDUSTRIAL ENGINEERING_ (PSB-ACADEMY); CERTIFIED MANAGEMENT CONSULTANT (CMC); PRACTISING MANAGEMENT CONSULTANT (PMC); MEMBER, INSTITUTE OF MANAGEMENT CONSULTANTS (IMC) SINGAPORE

Aik Teng currently manages his own consultancy, AT Consulting Services. One of his most recent projects includes being the LEAD Project Manager for the Singapore Logistics Association. Prior to running his own consultancy, he has been with SPRING Singapore for 20 years, and was the Head of the Organisation Excellence Department from 2004-05. He was also SQA Lead Assessor and Team Leader up till 2008 and has been involved in the SQA initiative since its inception in 1993. Tasked to start up the consultancy unit within the then Productivity & Standards Board (PSB) to provide training and consultancy services to organisations, his consulting team assisted close to 30 organisations during that period. He was also involved in a project coordinated by the Singapore Cooperation Enterprise (SCE) to assist the Bahrain Labour Fund in their Labour Reform strategy, which included helping the Bahrain government to initiate a Productivity Movement as well as develop the productivity of the local enterprises. In addition, he was appointed as Project Manager to assist the Government of Botswana to implement a national Productivity Movement, from 1994 to 2003. Botswana is currently held as a model of Productivity in the Pan-Africa region.

For more information on the course, please visit the Singapore Productivity Association at www.spa.org.sg, or write to us at CPP@spa.org.sg. Alternatively, you could also contact our secretariat:

Ms. Leanne Hwee
DID: 6375 0938

Mr. Ashton Chionh
DID: 6375 0940

The Singapore Productivity Association Productivity Seminar

BASICS OF PRODUCTIVITY

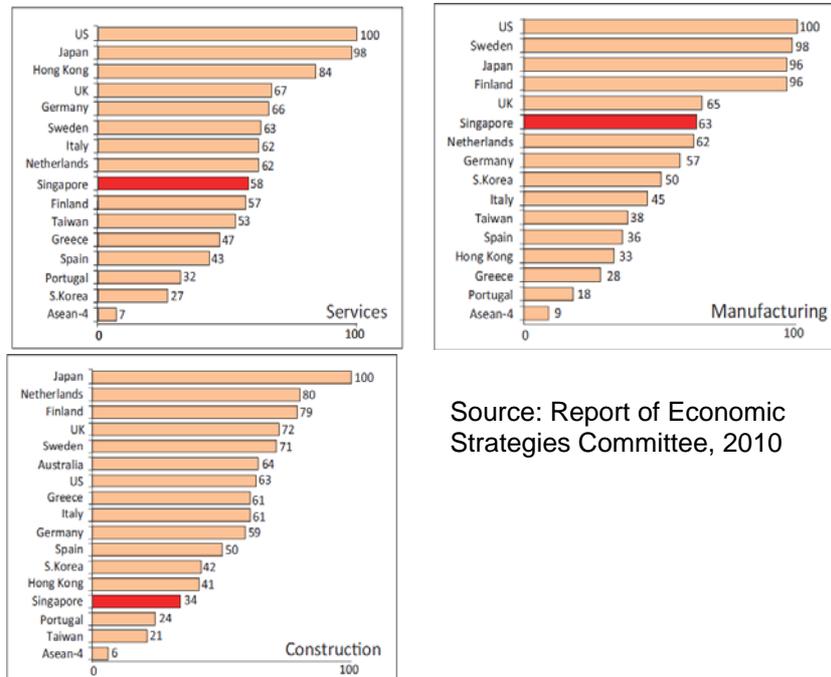
Why a Productivity Seminar?

Singapore businesses and the workforce are gearing up to address productivity challenges that have arisen in the past decade.

Key findings from the recently disseminated Report of the Economic Strategies Committee highlighted that:

“In absolute levels, Singapore’s productivity in manufacturing and services are only 55 to 65 percent of those in the US and Japan (see Figure 1). In the retail sector for example, our average level of productivity is about 75 percent of that in Hong Kong and one-third that of the US. In construction, productivity levels are half that of the US and one-third that of Japan.”

Figure 1: Cross Country Productivity Comparisons⁵



Source: Report of Economic Strategies Committee, 2010

What is the Seminar about?

The Singapore Productivity Association has developed this Seminar for the purpose of providing information to all parties on the basics of productivity. Specifically, the seminar aims to:

- Refresh – everyone on the meaning and concepts of productivity
- De-myth – explain what productivity is and is not, especially in the current day context
- Inform – about the Tools, Techniques and Methodologies

What would you learn?

At the end of the seminar, you would understand:

- the key productivity concepts, including how productivity is measured
- the relevance and types of tools available to improve productivity
- the way forward to implementing productivity in your company.

Who should attend?

This seminar is targeted at employee that needs to understand the importance and relevance of productivity at work. They may be involved in developing and managing; or are part of teams that implement Productivity initiatives.

Targeted employee could include:

- Managers
- Senior Executives
- Supervisors
- Senior workers with team leadership responsibilities.

When and Where would this be held?

Please look out for our schedule on our website: www.spa.org.sg or contact Ms Leanne Hwee at DID: 6375 0938; Email: leanne.hwee@spa.org.sg

How to register?

To register, please fill out our Registration Form here:

<http://www.spa.org.sg/images/events/downloads/RegistrationForm-PS.doc>

Contact us

For more information about the seminar or future runs, please contact:

Ms Leanne Hwee at DID: 6375 0938; Email: leanne.hwee@spa.org.sg