

Master Students Get A Master Class In Government Enterprise Architecture

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Dr. Pallab Saha (first row, second from right) with delegation leader, Associate Professor Kumar Mehta (first row, extreme right) and students of Master of Science in Technology Management from School of Management, George Mason University.

At the end of Dr. Pallab Saha's lecture on the Singapore government's approach to enterprise architecture to Master of Science in Technology Management students from George Mason University, the questions came fast and furious.

"Is the government encouraging the elderly to use e-services?"

"With projects that stretch across several agencies, how does the Singapore government ensure each agency prioritises the project?"

"Is the Singapore government looking to move into government-to-government collaboration?"

It was clear that the 20 students were fascinated with the Singapore perspective on the newly emerging field of government enterprise architecture. Enterprise architecture is the ongoing process of building the ability to tackle complexity and flux, with the goal of creating and sustaining coherent enterprises. It is increasingly being adopted by governments to manage the complexity of delivering national and state services.

The lecture at the Institute of Systems Science on February 21 was held at the request of George Mason University for 20 students – all senior executives - on an international study tour covering IT from an Asia Pacific perspective.

The university located just outside Washington D.C. offers a Master of Science in Technology Management programme that is one of seven in the United States that make up the US government's CIO University; graduating students receive a CIO University certificate on top of their master's degree.

"Almost all of our students work for the government or for companies that execute government contracts. Hence, the whole e-government approach is becoming very important for everyone in the class," explained delegation leader Associate Professor Kumar Mehta.

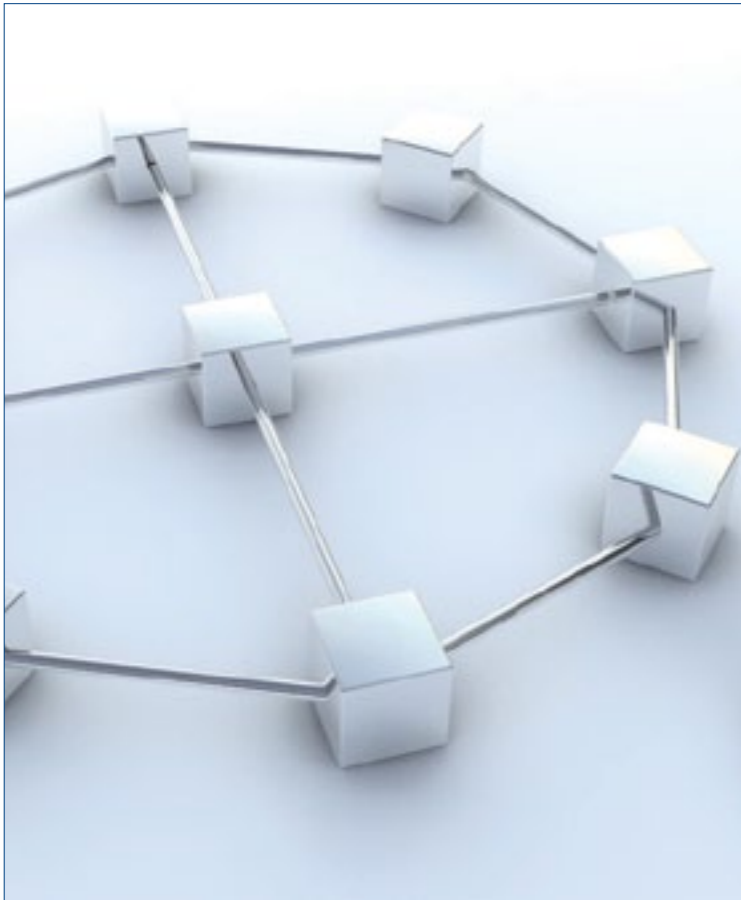
“ e-Government is very new and different countries are trying different things. Singapore is one of the international leaders of e-government, ”

he added. "Dr. Saha is one of the lead advisors in government-mode adopted by the Singapore government. He was the right person to come to get a first-hand view of the processes adopted by the Singapore government."

For student Owen Walsh, the Principal of Technical Project Management at AOL, the talk was thought-provoking.

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Insights Into How Singapore Government Approaches Enterprise Architecture

Q: *Is the Singapore government encouraging the elderly to use e-services?*

Dr Saha: The Singapore government makes e-services cheaper to encourage take-up. However, the Singapore government offers the same services on paper to cater for a segment that is unable to use e-services. That said, IT literacy has increased greatly over the last 30 years.

Q: *To bring people and players on board, is the strategy to make it so that there is a disadvantage if you are not on board?*

Dr Saha: Yes, the approach taken is to make it so that players can be part of that big pie. It is a political issue, so it can't be tackled by IT departments alone. It's about making it such that everyone wins.

Q: *One of the difficulties of enterprise architecture is in managing exceptions. How does the Singapore government do it?*

Dr Saha: We have a strong governance board, so if you have an exception, you have to go to the board and make a strong case why this exception has to be made. This exception then becomes part of the feedback loop, and over time it becomes no longer an exception but a standard.

Q: *“With projects that stretch across several agencies, how does the Singapore government ensure each agency prioritises the project?”*

Dr Saha: In Singapore, we have lead agencies for each project that are responsible for demonstrating thought and practice leadership. ●

“I love the way enterprise architecture has been applied by the Singapore government. I enjoyed the insights into how the Singapore government operates and the level of collaboration between agencies. One of my key takeaways from the talk is how in Singapore, government enterprise architecture is not a federally regulated requirement - there was no big stick driving the e-government initiative and no beating people over the head with metrics like we have in the US - and yet it is working better because people have bought into the programme.”

His classmate, management consultant Julie Lovett, was equally stirred by the talk.

“I am a contractor for a government agency. And in our agency, we don't even like to share data across divisions. It would be great if we can use the Singapore model. Personally, I would go back to the agency I work with, and I am going to talk about the insights I gained from the talk to see what we can do about improving the sharing of data across divisions. So this has been time very well spent.”

For Associate Professor Mehta, the lecture has been such a success; he is already thinking about bringing another class. “We are in the process of planning for next year and there is a high probability of us returning to Singapore and to the Institute of Systems Science.”

ISS' Board Member and Director Honoured at the SCS IT Leader Awards 2012



Mr Lim Swee Cheang, Director of ISS (third from left), the Guest-of-Honour, Dr Yaacob Ibrahim, Minister for Information, Communications and the Arts (fourth from left), Ms Wu Choy Peng, CIO of NOL (fourth from right), Mr Alphonsus Pang, President of SCS (third from right) and other award recipients.

Ms Wu Choy Peng, group CIO of logistics firm Neptune Orient Lines (NOL), was honoured as the 2012 IT Leader of the Year at the annual Singapore Computer Society (SCS) event on March 2. Ms Wu, who is also a management board member at the Institute of Systems Science (ISS), was conferred the award for being instrumental in architecting NOL's IT plan and streamlining its operations.

Mr Lim Swee Cheang, Director of ISS, was inducted into the IT Hall of Fame for helping the local IT industry implement several IT education programmes. ●

Stealing ATM card data is easy: Experts



Technology experts told The Straits Times that magnetic strips used in ATM cards are old technology and vulnerable to skimming. Dr Derek Kiong, a computer security lecturer at the Institute of Systems Science, National University of Singapore, told the English daily that anyone can buy an electronic card reader to 'read' the information on the magnetic strip.

After personal information embedded in the magnetic strip of the ATM card and the cardholders' PINs (personal identification numbers) are stolen, ATM cards can be cloned using a \$300 machine sold in places like Sim Lim Square. These machines are sold openly because they are used by organisations such as spas and department stores to create loyalty cards for customers.

Other experts said cyber thieves target ATMs because they can physically get at the money and disappear after breaking into an ATM. Such skimming attacks can also happen at shops, petrol stations and convenience stores.

For example, a shop assistant can simulate an ATM card transaction by swiping the ATM card and letting the customer key in the PIN. The data he captures electronically is not sent to the bank but collected by him. After enough data is collected, he clones the cards and steals money from the cash machines.

ATM card security has been under scrutiny after \$500,000 were stolen from about 400 customers in two days as part of what was believed to be an ATM-skimming scam.

US\$114 billion (S\$147 billion) were lost globally to cyber thieves in 2011, according to research company Symantec. This sum includes time spent to recover the lost money.

Future solutions

According to The Straits Times,

“the best prevention against such ATM fraud would be to switch to a smart card technology that embeds computer chips into cards.”

The computer chips encrypt personal information and make it tougher for thieves to steal the data.

But practical difficulties mean this solution will not be adopted anytime soon.

For example, it would be difficult for banks to switch to smart cards as it would mean an overhaul of the entire ATM system, an expert said.

Retail outlets and other organisations that use ATMs will also need to change their equipment, he added. This would mean hefty investments.

This article is extracted from AsiaOne on Jan 08, 2012. ●

How To Convert Your Data Into Valuable Insights



Many organisations have large amounts of data, but do not know how to obtain value from their data.

The Institute of Systems Science's Strategic IT Management cluster has rolled out a business-aligned programme called **NICF – Customer Analytics**. The first run will take place on May 30 and it aims to teach business marketing analysts, business development managers and IT managers how to segment and profile their customers to better understand them and know when to market to the right customer, with the right product and through the right channel.

“Each touch point with a customer is an opportunity for an organisation to collect useful data.”

When organisations ask the right questions and apply the right analytical techniques to their data, they can convert their data into valuable insights. These insights in turn, can help organisations to increase their Return on Investments. ” says Dr Carol Hargreaves, the course instructor.

Attracting Valuable Customers

Most organisations strive to keep their most valuable customers and to continue attracting new ones so as to improve profitability. This course teaches how to identify profitable customers so that the business can keep and acquire more of them. It is also about making

less profitable customers more profitable, thereby increasing the return on investment for the business by applying direct marketing to acquire and keep customers instead of mass marketing.

In a three-day hands-on programme by Dr Hargreaves, there will be three practical workshops which will demonstrate how to segment and profile your customers using SPSS Modeler.

“Participants can expect to apply the different marketing tactics to different customer segments through customer segmentation and profiling.”

Customer profiling not only helps organisations to understand their customer segmentation descriptively, but also behaviorally. Customer profiling can guide organisations on how much money they should be spending per month on the different segments based on the return on investment and profitability of each segment.

At the end of the programme, students will be able to solve business problems using analytical techniques such as customer lifetime value, latency and RFM scoring (which stands for Recency, Frequency and Monetary).

The NICF – Customer Analytics Programme in ISS for 2012

Dates : 30 May, 26 Sep & 05 Nov

Duration : 3 days

Fee : \$770.40*

Course Topics:

- Introduction to Customer Analytics
- Customer Marketing Basics
- Applications of Customer Analytics
- The Business Customer Game
- Customer Segmentation using Latency
- Customer Profiling using RFM Modeling
- Customer Value Assessment using Customer Lifetime Values
- Profitable Customer Segments
- Overall Business health of the Company

Please contact Ms Wong Swee Lee at sweelee@nus.edu.sg for more details.

* This course is aligned to the National Infocomm Competency Framework (NICF) and accredited by WDA. Up to 70% WDA funding of the course fee is available for eligible participants (Singapore Citizens and Permanent Residents). Absentee payroll subsidy is available for eligible companies and companies on a short work week system will receive the absentee payroll subsidy based on their employees' current income. Terms & conditions apply. Please visit www.wda.gov.sg for full details. ●

Delivered: The Tools Needed To Develop A Healthy Framework For Singapore Public Healthcare

In May 2008, four men at the Institute of Systems Science were given a mammoth task: To kick-start an enterprise architecture that would drive solutions across Singapore's public healthcare sector.

The four men are Dr. Pallab Saha, Mr Goh Boon Nam, Mr Richard Tan and Mr Tan Eng Tsze. Together they make up ISS' enterprise architecture team. Their client was Integrated Health Information Systems Pte Ltd (IHIS), a healthcare-IT leader that manages highly integrated systems and IT expertise across Singapore's public healthcare sector.

The task IHIS handed the quartet was this: To not only jointly develop with IHIS an enterprise architecture that would span the entire Singapore public health system but also at the same time, train and coach IHIS staff so that when the ISS consultants leave, IHIS can continue the enterprise architecture journey on its own.

However the difficulty in creating an enterprise architecture framework that would be just what the doctor orders – and the patients, hospitals, specialist centres and polyclinics order – is that the complex system supports more than 30,000 healthcare users at all public hospitals, national specialty centres and polyclinics throughout the island.

The task was tackled in four phases. The ISS team kicked off the project by conducting a five-day enterprise architecture training for all IHIS staff involved in the project.

This was followed by a six-month period in which four reference models (Business Reference Model, Data Reference Model, Solution Reference Model and Technical Reference Model) were developed.

In Phase 3, the team worked with its client to develop an enterprise architecture framework and methodology. This took five months. In the final phase, the team developed a Chronic Diseases Management programme using the established framework and methodology.

By the time the project was completed in February 2010, ISS and IHIS had co-created an enterprise architecture that details the business goals of the Singapore public healthcare system and how IT would be harnessed to achieve those goals. The enterprise architecture also enables the group to govern the use and selection of IT platforms and systems, so that they would be standardised and interoperable, as well as help the staff to present information to clinicians and administrative offices in a more useful way.

Commented IHIS Project Manager Mr Tan Cheong Chuan, "The ISS team carried out an excellent facilitation plan for our team as well as users, allowing us to achieve the objectives of this project. The ISS team displayed flexibility, professionalism and commitment to the project. They were thorough in their delivery and engaged us efficiently. The

course content is of high quality and actionable, and our team is able to use them for future reference and enterprise architecture work as we continue our enterprise architecture journey.

He added,

“ **We had an enjoyable learning experience from the interactive workshops and well planned course modules. Above all, the project helped shorten the learning curve for the course participants for subsequent enterprise architecture work in support of the healthcare continuum.** ”

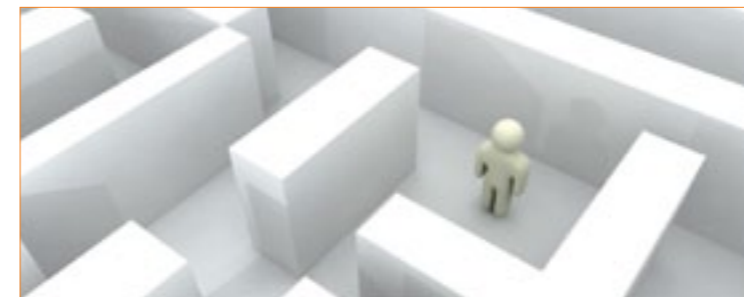
Dr. Chong Yoke Sin, Chief Executive Officer of IHIS also gave thumbs up for the results. "The method of engagement – through both teaching and consulting - was very effective for IHIS as our group has to update its enterprise architecture regularly to reflect dynamic changes in the healthcare landscape. The engagement was effective and the team was able to produce the enterprise architecture framework for the group within the specified time." •



ISS Delivers Suite of Service Innovation Courses

With a radical shift in the locus of power to customers, companies that are capable of anticipating their customer's needs, wants, desires, aspirations or pain-points and involving them in the process are better positioned to innovate and design new services and service systems that are focused, yet adaptive and responsive.

The ISS' Service Innovation (SI) cluster has rolled out a suite of Service Innovation courses this year. The curriculum comprises requisite competencies which are essential for firms to innovate and steer in the direction of what customer values through co-creation. The courses are: the NICF - Leading in Service Innovation, the NICF- Design Thinking in Service Systems – Conception and the NICF - Design Thinking in Service Systems – Design.



New Leadership Thinking

Led by an accomplished team of innovators, strategists and scholars in Service Innovation, the two-day programme, **NICF - Leading in Service Innovation**, is designed for new leadership thinking and management renewals using key principles that are essential for survivability, sustainability and growth.

How to remain viable in a knowledge-driven, highly connected world that is rapidly evolving, while intensifying our capabilities to be customer-centric and outcome-driven? Current management practices and organisation structures are not optimised to serve customers in this changing environment.

This programme will introduce emerging concepts in Value Co-Creation, Service Systems, Service Dominant Logic, Management of Social Complexity and other contemporary topics. Learning is achieved through active participation provoked by real-world case studies, workshops and exercises. Participants will

“ **uncover innovation opportunities by leveraging critical shifts and new paradigms to ignite service innovation initiatives** ”

by envisioning the new norm with insights to lead innovation in the organisation.

Participants will earn 9 Professional Development Units (PDUs) upon successful completion of this programme.

Starting with the Customer

“ **Design thinking taps into capacities often overlooked by more conventional problem-solving practices.** ”

It is human-centered and relies on our ability to be intuitive, to recognise patterns, to construct ideas that have emotional meaning as well as functionalities to conceive service systems.

Through a three-day experiential learning in the **NICF- Design Thinking in Service Systems – Conception programme**, practitioners and managers will be immersed in conditions that will evoke empathy for their customers, allowing them to identify the challenges their organisation faces in engaging them. Participants will also be taught how to apply design thinking to evolve ideas from abstract to service concept.

Participants will earn 14.50 Professional Development Units (PDUs) upon successful completion of this course.

Service System Design

The three-day programme, **NICF – Design Thinking in Service Systems – Design**, takes a Design Thinking approach to conceptualise such a service system by evolving the concept into an artifact; something tangible - of shape and form - that can be made operational.

“ **A design focused on co-creation is achieved by validating the attributes of value throughout this process.** ”

It involves a de-composition of the concept into parts, modeling, testing and adapting the service and the systems that support it. It may also involve some experiments and prototyping in the context of a real or simulated scenario.

Participants will systematically learn contemporary methods in designing Service Systems using a highly iterative and adaptive process model that continuously evaluates the desired customer experience and intended outcome of the service. Through this lens, they will evolve their Design. Participants will also learn various design patterns, methods and techniques with workshops to practice. They will be challenged by the contextual varieties with service systems that cross organisation and system boundaries resulting in value being co-created and experienced by the customers.

Participants will earn 14.50 Professional Development Units (PDUs) upon successful completion of this programme.

Schedule of Service Innovation courses in ISS for 2012

NICF-Design Thinking in Service Systems – Design

Dates: 02 May, 22 Aug and 30 Oct
Duration: 2 Days
Time: 9am to 5pm
Fee: S\$770.40*

At the end of the course, participants will be able to:

- Drive the process of transforming a service concept into a working solution ready for implementation
- Employ appropriate service design methods for different contexts
- Formulate the logical sequence of actions in the service interaction and interplay between various front-stage, back-stage and support processes
- Prepare an appropriate mock-up/prototype of the proposed service to demonstrate the feasibility and viability of the service
- Evaluate and adapt mock-up/prototype to meet the established value proposition

Course Topics

- Dynamics of Service Innovation
- Design Thinking and Principles of Service Design
- Scoping the Service System
- Formulating the Design and Hypothesizing
- Modeling Customer Experience
- Modeling the Value Network
- Determining the Service System and System-level Outcomes
- Planning Composition of the Service System
- Integrating with the Business Process
- Establishing Service System Requirements & Performance Criteria

NICF - Leading in Service Innovation

Dates: 10 May, 26 Jul and 8 Oct
Duration: 2 Days
Time: 9am to 5pm
Fee: S\$577.80*

At the end of the course, participants will be able to:

- Initiate and manage vital service innovation initiatives that leverages co-creation opportunities
- Gain insight into the trends that will impact the industries you work in
- Understand the nature of services and systems and how they influence user experience
- Formulate outcome driven performance measures that define success innovation

Course Topics

- Imperatives for Service Innovation
- Leadership & Management Opportunities for Service Innovation
- Scaling New Heights From Norm to New Norm
- Developing Service Strategies
- Achieving Buy In For Service Innovation

NICF- Design Thinking in Service Systems – Conception

Date: 28 May, 15 Aug and 22 Oct
Duration: 2 Days
Time: 9am to 5pm
Fee: \$770.40*


At the end of the course, participants will be able to:

- Understand the concept of value in services
- Know how to systematically evolve a fuzzy idea/opportunity to an envisioned service concept
- Have a paradigm shift towards a service dominant mindset and outside-in outlook of service systems
- Leverage ongoing trends that enable co-creation in service system
- Apply techniques such as ethnography and synthesise data from multiple sources into valid service propositions
- Describe the service system conceived, rationalise and defend why the concept is worth pursuing, explain its value proposition and the outcome intended for the customer

Course Topics

- Overview and Trends of Service Innovation and Design
- Service Logic
- Innovation Areas
- Design Thinking and Principles of Service Conception
- User Research Techniques
- Ethnographic Technique
- Analytical Tools and Technique
- Opportunities Identification
- Service Attributes and Selection
- Value Proposition and Concept Mapping
- Concept Framing and Communication

For more details on the Service Innovation programmes, please contact Ms Wong Swee Lee at sweelee@nus.edu.sg

* The above courses are aligned to the National Infocomm Competency Framework (NICF) and accredited by WDA. Up to 70% WDA funding of the course fee is available for eligible participants (Singapore Citizens and Permanent Residents). Absentee payroll subsidy is available for eligible companies and companies on a short work week system will receive the absentee payroll subsidy based on their employees' current income. Terms & conditions apply. Please visit www.wda.gov.sg for full details. 

“Engaging with ISS helped us attain a higher degree of learning, significant relevance and value in the actual innovation work we perform.”

– Lee How Sheng,
Singapore Pools

Chinese Imitation - Plain Old Copycat Or A Whole New Animal?



The Chinese practice of ripping off branded products and services is so rabid and widespread, it has earned its own appellation, shanzai, which means ‘mountain bandit’ in Mandarin. The term is a reference to the warlords or bandits who do as they please in their remote mountainous domains far away from official control.

Is the Chinese’s notorious practice of ripping off branded products simply despicable copycat behaviour or has the Chinese created a whole new way of innovating? Dr. Virginia Cha, Chief (Research Practice) of ISS certainly believes it is the latter, as revealed by her in a Innovation Update Seminar she titled “Did you shanzhai today?”

In China, shanzhai is used to describe a vendor who operates a business without paying heed to laws, rules or conventional practices. Dr. Cha suggests that shanzai is a phenomenon that goes far beyond copying. Indeed, she argues

that it is a whole new culture that is bringing about innovative and unusual products and business models.

Shanzai is revolutionising the global marketplace because it allows for the creation of products tailored very specifically to customers’ tastes, budgets and style at very high speed and very low cost.

Shanzai products are no longer of poor quality. And they are increasingly winning in the marketplace. In 2010 the Financial Times estimated that shanzhai phones accounted for about 20 percent of the global 2G mobile market.

The reasons for the success of shanzai companies, said Dr. Cha, are their ability to respond faster to market needs and their lower cost structures which makes the cost of experimentation very low. Shanzai companies win over consumers because they do not

simply copy existing products but add value to an existing product by making it better in various ways, whether it is by packing it with richer functions, integrating it with local applications or by providing better customer service. And they are able to achieve this by listening closer to their customers, which lets them learn faster what works with their customers and what does not.

“Indeed the rapid evolution of the aggressive shanzhai firms has unleashed a vibrant entrepreneurial ecosystem in China, pointed out Dr. Cha.”

ISS' Master of Technology Gets Reviewed By Global Experts

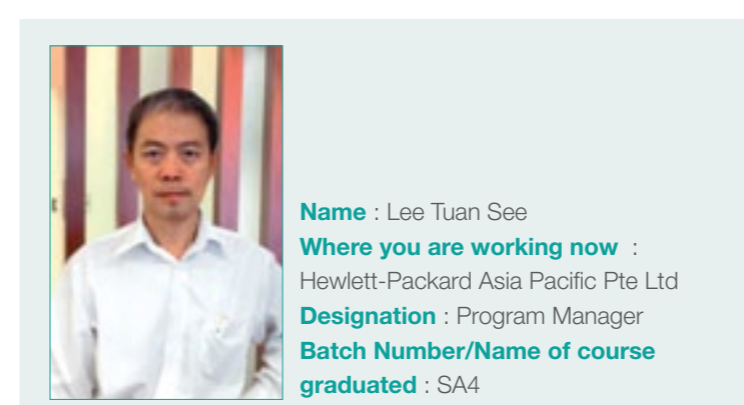
Class Notes

Systems Catalyst catches up with ISS Alumni to find out what they have been up to.

An interview with Ms Kotia Sandila



Name : Kotia Sandila
Where you are working now : Wolters Kluwer Financial Services FRS Global
Designation : Project Manger
Batch Number/Name of course graduated : SA25



Name : Lee Tuan See
Where you are working now : Hewlett-Packard Asia Pacific Pte Ltd
Designation : Program Manager
Batch Number/Name of course graduated : SA4

1. How are you applying what you have learnt at ISS?
 Apart from fundamental skills in coding & software design, ISS curriculum requires you to work within a team and contribute through others to achieve the final project's deliverables. Working in a team, managing and even leading a team are the essential skills that I have applied through my entire career after I graduated from ISS.

1. A typical day in your job...
 It involves managing projects for new and existing customers to implement a regulatory reporting solution in the Banks in Asia Pacific Region. This includes helping pre-sales process, liaise with the consultants to shuffle resources for the projects, work with the Product management team & clients to track project issues, and monitor project financials to be in line with revenue forecast. Well, it is definitely a job that can require you to collaborate with 4 different teams in a day!

2. The best thing about my job is
 I have the chance to work with different clients and project teams. As there is no fixed project management experience, I really enjoy the different scenario and outcomes happening in different projects, definitely a challenge!

3. What you remember most of your time in ISS?
 The bonding time I have spent when delivering the final project's solution. We stayed overnight in the campus and worked deliberately just to deliver. It really crossed my mind that you will never be able work alone and this is what I will face in the real working environment.

4. Free time is spent..
 I love vintage fashion and arts. Starting a new blog soon and I find it relaxing to walk to places around the city and take pictures with my camera, especially taking pictures of people's expressions; they're awesome and tell you 1000 stories.

Name : Annie Kok Wai San
Where you are working now : Hudson Pte Ltd
Designation : Technical Recruiter
Batch Number/Name of course graduated : SE4

Name : Teo Chong Nan
Where you are working now : United Overseas Bank
Designation : Vice President
Batch Number/Name of course graduated : KE6

(From left) Director of ISS, Mr Lim Swee Cheang, MTech Visiting Committee Members, Prof Paul Strooper, Dr Marina Jirotko, Prof David Robertson, Evangelist, Postgraduate Program Advisory, Mr Howard Russon and the Deputy Director & Chief, Graduate Programme, Mr Leonard Nee.

The Master of Technology Programme by the Institute of Systems Science at National University of Singapore was reviewed by experts from global universities in February this year. The three experts — **Dr Marina Jirotko**, Reader in Requirements Capture, Governing Body Fellow, St Cross College at University of Oxford's Department of Computer Science, **Professor David Robertson**, Head of School of Informatics at the University of Edinburgh, and **Professor Paul Strooper**, Professor of Software Engineering (Division of Systems and Software Engineering) at the University of Queensland's School of Information Technology and Electrical Engineering — arrived on a 3-day visit from February 7 to February 9 at ISS.

This visit of the overseas experts is the culmination of a "self-assessment" exercise conducted by all faculties every three years, and is one of the university's standard quality assurance processes. The Visiting Committee conducted a detailed assessment of the programme and the institute and provided invaluable suggestions.



MTech Visiting Committee together with ISS' MTech Teaching Staff.

About the Master of Technology Programme
 The Master of Technology is offered jointly by the Institute of Systems Science, the Department of Electrical & Computer Engineering and the School of Computing at the National University of Singapore.

This programme will lead to the award of a Masters degree by the National University of Singapore. It offers specialisation in either software engineering or knowledge engineering and is specifically designed to meet the needs of today's busy IT professionals and managers without disrupting their work and career. The curriculum emphasises understanding and exploitation of advanced technologies and management disciplines. It focuses on the practical application of innovative techniques and developing the IT professional's capability for innovation.

This Masters programme extends over a minimum period of two and one-half years, and a maximum of five years of part-time study. The programme is also available on a full-time basis over a minimum period of one and half years. For more information, please visit www.iss.nus.edu.sg/mtech •

In The Business Of Making Businesses More Intelligent



Dr. Carol Anne Hargreaves admits that she has an obsession with intelligence. But not just any intelligence. For over 20 years, Dr Hargreaves has worked with a variety of industries to make businesses more intelligent. More specifically, she achieved this through the red hot science called business analytics.

Business analytics is the use of technology to study past business performance to gain insights that would help drive business planning. It focuses on understanding business performance based on data and statistics.

Holder of a PhD in statistics, Dr Hargreaves' extensive credentials in the field include working as a Quantitative Methods Manager at Cegedim Strategic Data in Australia providing market research analysis for pharmaceutical giants such as Pfizer, Novartis and Merck Sharp & Dohme. For three years, she was also the Advanced Analytics Statistician at Synovate Aztec in Australia, where she developed sales and marketing models for food manufacturers like Nestle, British American Tobacco and Goodman Fielder. She also previously served as a biostatistician at the National Health Medical Research Council at the University of Sydney and Head of Department for the Department of

Statistics at the University of Durban-Westville.

Dr. Hargreaves joined the Institute of Systems Science in October as a Member of Business Intelligence after the institute identified a gap in terms of a shortage of business analytics talent in Singapore.

"It is my opinion business analytics is truly the most up-and-coming field of this age across all industries," stressed Dr. Hargreaves. "More and more companies are realising that they need to make better use of their data but they don't know how to or don't have the talent to do this. ISS has identified that there is a gap in terms of business analytics talent and we hope to meet the needs of industry by developing and teaching business analytics courses."

“ For Dr. Hargreaves, business analytics is more than a discipline. It is a passion. ”

"I do believe that there is a strong need for all companies to understand and use their data when making business decisions. Gone are the days when decisions can be made on hunches. That is why, for me, there can't be a more exciting subject to teach than business

analytics, and why this position at ISS is the perfect match for me."

She is not the only passionate individual in her family. She and her husband, a regional quality manager, are parents to two impassioned teenagers. Her daughter Kim, 17, sings well and loves to act in plays. Her son Darian, 15, excels in running and soccer.

Dr. Hargreaves harbours another secret passion though – for that extreme discipline called the ultra marathon.

"One achievement I am proud of is completing an ultra marathon in 12 hours. In 1999, I decided that I wanted to do something completely different, something out of my comfort zone for the new millennium. That was when I decided to complete the 100 kilometres ultra marathon in 2000. And I did it! It took a lot of discipline, reading up on running, training in the early hours in the morning, going to bed early and eating the right food. I cannot explain the feeling I had when crossing the finish line."

Perhaps it can best be described as the high she gets from teaching business analytics? ●

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