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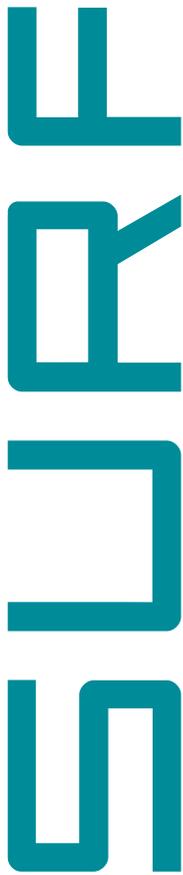
Solutions for Urbanised Future

VOLUME 8
FEBRUARY 2015



Staying Agile in
the Digital Age





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Gain insights into how organisations can achieve agility through better understanding of their app performances, business fundamentals and the value of IT, as surmised from an exclusive roundtable discussion that saw participation from CA representative as well as NCS spokesperson.

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The Way We Will Work

What are the key trends in the workplace of the future, and how should companies stay competitive and effective?

As the workplace undergoes a revamp due to technology, globalisation, and other challenges, how will your staff thrive and work? Managing workers in today's high-tech and high-growth global economy can be extremely challenging—but it need not be so.

High-Tech, High Growth

The growing availability of technology such as Big Data, the Internet of Things, cloud technology, mobility and automation is changing the way people work.

For instance, virtual communities, sharing and collaboration are all happening online, and this affects both the work and personal space. The ubiquity of mobility devices and technologies means that employees are no longer tethered to specific times and places to work. Equipping workers with necessary technologies and tools will mean increased mobility and productivity.

Organisations will need to be agile and nimble when it comes to adopting new technologies. The idea is to utilise the latest technologies before the competition does. They need to strike the balance between utilising emerging technology and cost considerations, with the view to meeting business needs and driving customer engagement.

According to findings by NCS's SURF Emerging Technologies Maturity Index 2014, Singapore organisations are well ahead in terms of high-tech adoption. Some 20% of Singapore businesses interviewed have invested in multiple emerging technologies (cloud, mobility, Big Data, machine-to-machine [M2M], social) over the past

12–24 months. Looking ahead, between 2014–2016, these investments will rise substantially as approximately 80% of businesses will invest across all technology domains.

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Cloud-based services have revolutionised IT usage and cost models for organisations large or small. Technology like Software-as-a-Service and cloud brokerages like CloudConnect can enable even the smallest organisations to have the latest and top-of-the-line software and infrastructure in minutes, giving them reduced cost and speed to market.

The Millennials

Predictions suggest that the millennials or Generation Y (who are in their 20s and 30s) will soon make up the majority of the workforce. They are digital natives who seem more motivated by personal values and aspirations, instead of career advancement. A big thing is mobility, which allows them to be connected

any time, anywhere, and on any device. They tend to view mobility as having a direct correlation with their quality of life.

Instead of the traditional climb up the corporate ladder, millennials want better work-life balance, and desire more flexible ways of working. This could mean working on a part-time or project basis, less travel, or to work



Thinking Big

With globalisation, organisations—whether large or small—have the opportunity to reach new markets, but it also means they would have to



THE WAY WE WILL WORK

anywhere, whether in the office, from home or wherever their job takes them.

Involving Women

In sectors or economies with a shrinking workforce, one way to ease that shortage is to tap on women, attracting those who left the workforce after marriage or after children.

More women have joined the workforce, amid a tight labour market and low unemployment, according to findings in the “Singapore Workforce, 2014” report by Singapore’s Ministry of Manpower’s Research and Statistics Department. The participation rate for females rose from 51.3% in 2004 to 58.6% in 2014, reflecting on-going initiatives for better work-life integration.

Embracing Mobility

To cater to this increasing group of millennials and women, employers should tap on mobile workforce technologies to create flexible work environments that allow for telecommuting. A helpful application is having well-integrated enterprise portal that aggregates all the key information, applications and widgets to give millennials the flexibility they want, and provide women with the ability to multi-task and achieve better work-life integration.

The option to telecommute or remote work has resulted in an “invisible” portion of the workforce, or virtual employees relying heavily on mobility tools.

Digital Teams

With Internet technology and mobile workforce, team members are no longer tied together by geography. Members in teams can be in different offices, different geographies, and even different time zones. A scenario could very well be that you are working on a file or project, and at

the end of the day, hand over the work to a team member in another time zone who will take over and continue working while you knock off for the day. The next morning, the completed project will greet you in your inbox when you start work.

These teams are bound by collaborative technologies that allow members to have team sessions online, to collaborate without being physically in the same room—but all sharing the same goal and vision.

Having team members in different time zones can decrease time to market, as the project work can be passed between different time zones, dramatically increasing the speed to market.

Adding the right social collaboration tools into a well-integrated enterprise portal can help teams to brainstorm more effectively, increase the level of employee engagement, and make the future workplace a social playground where ideas flourish freely.

Always-On Workplace

Imagine a single place where a worker can get all the necessary information to work—whether it is the latest news from the agencies, employee benefits, or customer information.

The ubiquity of mobile devices has resulted in an ‘always-on’ connectivity to the work place, which translates to higher productivity and flexibility.

Forward-thinking organisations should consider how best to help employees make effective use of technology without the downsides of being plugged in 24/7.

In addition to mobility, the modern web portal can be the single entry point to corporate web services,

allowing users to exchange information and inform themselves about various topic areas. It would have content aggregated from traditional servers, systems, and employee self-service systems. From a master dashboard, workers can access information, with enterprise social, document collaboration, and extended transactional capabilities together with pervasive mobile access.

Corporate Agility

With the rapid pace of change in today’s business world, companies would do well to embrace the mindset and principles behind agile software development. This would entail responding to change instead of avoiding it, and working on parts instead of whole solutions.

The agile software development methodology is ideal as the approach of choice for software development projects. This is because expectations have changed for deliverable software, and especially with non-trivial projects, the scope tends to evolve over time.

This iterative approach to software development has become a mainstream methodology, replacing more traditional approaches like the waterfall approach. The emphasis is on communication and collaboration, based on continuous feedback from the stakeholders. The advantage is the flexibility to adapt to emerging business realities.

Ultimately, this dynamic and rapidly changing workplace has created a highly competitive environment. Organisations that strive to succeed are those who are nimble and able to continually evolve their business models to bring forth more business values both internally for their employees and externally for their customers.



Achieve Win-Win Objectives with Agile Contracts

How to effectively structure your contract for a successful agile outsourcing partnership

Agile software development has gained traction in both the public and commercial sectors in the last few years in Singapore, as both organisations and vendors view it as a means to achieve faster time to market and better software quality.

Key to a successful project using the agile approach is the contract. The contract specification will need to be structured effectively in order to reap the benefits out of agile software development, which has a very different philosophy of looking at the client and vendor relationship.

Characteristics of Agile Contracts

A few important characteristics of an agile contract should examine the following criteria:

1. Link payment milestones to delivery of running software

Instead of paying for base-lined requirement specifications, design documentations in the waterfall model, reward the vendor for successful delivery of running software in production. This will compel the software vendor to strive towards working code, faster release timeline and attention to technical excellence. The shorter release cycle will gain from earlier end user feedback which in turn allows the client side to gain better visibility on the true needs of the market on the project scope.

2. Cater for easy scope change

Any non-trivial project has scope that evolves over time. A common pitfall in



traditional IT contract is the vendor's legal obligation to fulfill the requirements stated in tender documents and base-lined requirements documents, even when some of the assumptions in which these requirements are founded upon may no longer be true. A good agile contract needs to have a change management mechanism where both the client and vendor can swap in and out new scope that better serve the client business landscape. Avoid process heavy change management boards that discourage the working level to make changes to the scope. Give autonomy to the working level staff to make empowered decisions about what is best for the project.

3. Institute both carrot and stick policies

Many outsourced IT contracts have

liquidation damages clauses that punish the vendor for non-compliance to meet the stipulated commissioning date and achieve the required quality performance indicators. Many contracts however have failed to reward for early completion of work. Instilling rewards into the contract structure will motivate the vendor to perform beyond the basic service level agreement.

4. Transparent Definition of Done

A Definition of Done in agile terminology is the acceptance criteria for functionality requirements to be considered complete. It will include the scope of the testing (both functional and non-functional) to be conducted, the type of documentations that are required, and whether deployment to production environment is necessary. An agile contract should include a Definition of Done so that both client and vendor are transparent on the expectations.

Adaptation for Agile Contracts

The third core value of the Agile Manifesto shown above emphasises on customer collaboration. Contract negotiation often creates a lot of unnecessary overhead and lost time, resulting in adversarial relationship between customers and vendors, particularly when negotiating changes.

With an agile approach where the customer can see the current working product after a short iteration of 2 to 4 weeks, the customer can reprioritise the feature list.



ACHIEVE WIN-WIN OBJECTIVES WITH AGILE CONTRACTS

However, this manifesto value does not mean that we do not need contracts in agile project and all collaboration is informal. For the principles of customer and software development team collaboration model to flourish, most agile contract structure typically gravitate towards the following two models:

1. Fixed Price (FP) Contracts with Variable Scope
2. Time & Material (T&M) Contracts with strong rewards and penalty performance clauses

FP Contracts with Variable Scope

Between the two, Fixed Price (FP) contracts are generally preferred due to the limited upside risks. However, this is translated to generally higher prices by the vendor as the risks and unforeseen delays are bundled into the overall price package. To protect the bottom line, vendor will put in strict processes to project scope and change management, so that rework efforts (which directly translate to project costs) are kept to reasonable limits.

To allow for flexible scope change, the change management process will need to be spelt out in contract, to allow both business owner and vendor to make changes easily. For a FP contract, the following steps need to be worked out:

1. At project onset, jointly craft out the initial product backlog with a prioritised list of functionalities to be achieved by the project. Give a first cut effort estimate of each of these functionalities. The sum of this effort will be the project effort budget.
2. As the project progresses, allow the project scope to change, while keeping the total project effort budget constant. This will mean dropping some of the initial functionalities outside the scope of the project when new scope is

added or reasonable reduction with the complexity of existing functionalities.

3. Work out an escalation process if the client and vendor working level personnel cannot reach an agreement on the specific cost of each requirement specification.

Both client and vendor need to agree on a final maximum price at the beginning of the project. Any additional requirements that cannot be compensated by mutual agreement with the free-exchange approach can be paid through additional service request rates that are established in the contract. For this service request rate to work out for fixed price contract, there is a need for a reference set of requirements of varying complexities to be made available, so that future additional requirements can be mapped against these reference requirements.

T&M Contracts with Rewards and Penalty

At the other end of the spectrum is the Time & Material (T&M) contract, sometimes known as the headcount model. Basically the vendor sells the client professional services of their staff either at a blended rate per person or at a rate associated to the role and experience of the person. A pure time and material contract that does not have any penalty or incentive clause leave little motivation for the vendor to perform at maximum efficiency. The client needs to have technically inclined project managers and architect to manage the project, as the risk of project failure is borne by the client. For this reason, a pure T&M contract is often not favoured by client.

In a basic vanilla T&M contract, the risk of poor performance of the development team lies with the client. To encourage win-win situations, this

risk should be shared between the client and vendor. A T&M contract can be structured such that if the intended scope of the project is finished early, the client will end up paying less, and have a percentage of the savings passed over to the vendor as well. Likewise, a portion of the project bonus can be tied to good usability design of the system, and this should be accessed through end user feedback. These feedbacks can be obtained through usability surveys, user monitoring software that monitors the click-streams and conversion rates of end users. Linking client business outcomes to vendor bonus will strongly promote the need for IT vendor to align their performances with the client's business strategies and outcomes.

Likewise, penalty clauses can also be put in place to the vendor to guarantee a minimal service level. For example, these penalty clauses can be tied to the defect rate of software rolled out to production, liquidation damages to late rollout of each release.

Obligation of Both Parties to Co-operation

Client and vendor will need to co-operate, with the following duties spelt out in the contract:

1. Joint development of the functional requirements. Both parties will work hand in hand to produce the specification with at least two iterations in advance before development work commences.
2. Cater fixed time in regular working schedule to communicate and feedback. There should be obligations from both client side and vendor side stated in the contract to respond to enquiry within an agreed stipulated working days.

To find out more, email agilepractice@ncs.com.sg



Dispensing Medicine in the Digital Age



Pharmacies have never been so cutting edge – thanks to robotics, new technologies, and an intelligent software

You would expect the gleaming new robotic armature, automated dispensing machines, and conveyor belts to be found on a factory floor. In this case, they are the tools used by pharmacists at the Tan Tock Seng Hospital.

This spectacular showcase of mechanical efficiency has now taken over 80% of the picking, packing and assembly of medication at TTSH's main pharmacy – a task that used to be completely manual.

Previously, the pharmacists had to manually pick, pack and assemble medicines, a process that is tedious, time consuming and prone to error. In addition, patients had to wait an average of 20 minutes¹ before they could collect their medication, according to TTSH.

Today TTSH finds that patients get their medication in 10 minutes¹ and that includes the time they take to walk from the doctor's office to the pharmacy.

This dramatic change is due to the tight integration of different technologies and robotics from around the world that make up the Outpatient Pharmacy Automation System (OPAS).

The OPAS is the brainchild of several medical institutions in Singapore – Tan Tock Seng Hospital (TTSH), National University Hospital (NUH), National Healthcare Group Pharmacy (NHGPh), and Integrated Health Information Systems (IHIS), with support from the Ministry of Health.

After a study trip overseas, it was decided to utilise the automation model of the manufacturing assembly floor to build a system that can automatically read e-prescriptions, and simultaneously pick and pack medication. And with the help of a systems integrator, to build a management software that can orchestrate this combination of machines.

NCS was the systems integrator tasked with building this management software or nerve centre of OPAS, which became known as Rxpress Software.

It was a tall order, admitted Eric Lim Associate Director, Healthcare, Business Applications Services, NCS. "I won't deny there are challenges to

¹"TTSH's Outpatient Pharmacy ups the standard on Efficiency, Productivity and Safety in Medication Dispensing," Tan Tock Seng Hospital press release, 15 September, 2014, on Tan Tock Seng Hospital website, <http://www.ttsh.com.sg/about-us/newsroom/press-releases/article.aspx?id=7242>, accessed on 5 January 2015.



being the first in the region or possibly the world, to bring the extensive automation of the manufacturing assembly line to the highly manual world of an outpatient pharmacy.”

“The challenges and requirements were not always obvious as there was no prior experience or case study to work with,” he said.

This is the system that the pharmacy has been waiting for, and the NCS team was keenly aware that they had to get it just right. The collaborative effort between TTSH, the NHG Pharmacy and NUH has turned this vision into reality.

A total of six pharmacists from each organisation formed the core team of stakeholders who worked closely with NCS to build the Rxpress Software.

OPAS boasts technology that is unheard of in most pharmacies in Asia. It is a system that is built on the foundations of streamlining the workflow in medication picking, packing, labelling, assembling, verifying and dispensing through integration with automated dispensing machines and scanning devices. The improved medication workflow is not only reducing patient waiting time, but also raising efficiency and accuracy in the medication dispensing process.

The aim is to automate processes that are repetitive, such as picking, packing, labelling and assembly of medicine. The other goal is to improve staff productivity by doing away with the rework and reducing the number of calls they make to clarify prescriptions.

Previously, the TTSH staff had to rework 450-540 of the packed medication daily, due to patient’s drug preferences, costs or remaining medicines at home. Staff productivity

What Makes Up OPAS?

The Outpatient Automation System (OPAS) is made up of the following:

- High-speed Rowa Vmax medication dispensing machine from Germany that dispenses medication in boxes.
- Parata loose tablet dispensing robot from US which gives one of the world’s highest dispensing accuracy rates.
- Industrial robot armatures from the car industry in Switzerland that are customised to assemble medication totes.
- Barcode-enabled conveyor system to quickly move drugs from point to point.
- LED light guided manual picking system adapted from the manufacturing industry.
- RFID-enabled capabilities for shelving and barcode readers using High Frequency (HF) technology to detect tote’s location on shelves, allowing for faster assembly and identification of patient medication.
- Conveyors to allow for faster, easier assembly and identification of patient’s medication.
- Rxpress Software, the nerve centre of OPAS. It is an integrated intelligent software developed by NCS to coordinate all the above technologies, orchestrating the entire process from the time the medication is ordered to when it is ready for collection.

was also affected by the high volume of phone calls of up to 130 in a day from the pharmacists to the physicians to clarify and verify issues.

“Speed is of the essence,” said Lim. “The idea is to reduce the unproductive aspects of the pharmacists’ job, and to increase their contact time with patients, by streamlining the pharmacy processes.”

An Agile Approach

Before you imagine that building Rxpress Software was a walk in the park, think again. It was a project fraught with challenges, and the use of agile software development helped with its success.

“We found the agile methodology to be an incredibly effective management methodology for everyone involved, for both developers and stakeholders,” said Lim. “We had initially built the software based on the traditional waterfall approach, and the end result

wasn’t exactly what the user wanted.”

NCS decided to take a different approach and used the agile methodology, and immediately there was a much tighter loop between the developers and the stakeholders.

“The usual practice is for the business development team to gather project requirements from the stakeholders and the information is passed to the developers. With Agile, the users are talking and working directly with the developers,” said Lim.

The emphasis is on communication and collaboration, based on continuous feedback from the stakeholders. The advantage is the flexibility to adapt to emerging business realities.

Agile methodology is especially suited for a groundbreaking project like OPAS, where there is no precedence. NCS used the Scrum framework, an iterative and incremental agile software development framework,



where the project was divided into sprints. At the end of each sprint, the stakeholders and team members would meet to assess the progress of the project and plan the next steps. That allowed for adjustments and fine-tuning of the project direction.

In contrast to the traditional waterfall methodology, planning for the project was completed before moving onto the next phase of development, and completed phases were rarely revisited.

“The agile approach allowed us to continually test and get guidance from the stakeholders along the way. It was ideal for OPAS, as the requirements evolved and we could take into account new considerations,” said Lim.

Talking Different Languages

As NCS worked on the project, the team discovered that interfacing with the different machines proved to be challenging.

“All machines have their own specifications and workflows. Each had its own characteristics that needed to be integrated with each other,” said Lim. “The integration needed to be done well to enforce medication safety. Whether picking, dispensing, or assembly, at each point, there had to be checks in place to ensure it was the right drug for the right patient, or it couldn’t proceed with the next step in the workflow.”

Another consideration is that the entire workflow within the pharmacy is not completely automated. For the 20% of prescriptions that requires manual picking, OPAS uses coloured LED lights on shelves to guide staff to

pick the required medication. The system is also able to minimise the number of routes needed to fulfil a medical prescription, such as taking medication from as few machines as possible.

In addition, OPAS can identify areas in the workflow that are overwhelmed. For instance, if the pharmacists at the counter have a huge backlog of prescriptions to dispense, the system can alert users to pump more resources into the needed area, or slow down the backend processes.

Teamwork

The NCS team worked tirelessly to ensure the success of the project, with the software development team working in tandem with the support team. Several of the 16 members in the development team were based at NUH for many months, in order to ease the workflow and do away with any communication gaps with users.

Another important component to ensure project success was strong user support. NCS had a key and secondary support team to help with any user queries, said Lim Ai Ling, Lead Consultant, Business Applications Services, NCS.

The key support team was stationed at the pharmacy for several months, to help with any user queries, as well as to recalibrate the machines when needed, iron out any glitches, or to perform checks on the machinery.

Complete Makeover

OPAS has given the pharmacy a complete makeover, with brand new technology and an ultra efficient

workflow. Now, prescriptions are filled faster and more accurately, staff productivity is higher, and patients enjoy a better care experience.

OPAS has halved patient waiting times, with the average waiting time at TTSH and NUH being 10 minutes, and 15 minutes at NHG Pharmacy. In general, 20% of patients now wait 5 minutes or less for their medicines².

Now, the TTSH pharmacy staff can be stationed at the specialist clinics, instead of the pharmacy, to review medication with patients and make changes before the drugs are packed, increasing their job satisfaction and lowering employee turnover costs. This has also helped to reduce rework, saving \$5.8 million a year³.

With OPAS, rework rates at TTSH have dropped from 30% in 2011 to 5%; at NUH, from 30% to about 8%; and at NHG Pharmacy (Chua Chu Kang Polyclinic) from 15% to 8%².

With the productivity savings and improved patient care experience, OPAS promises to transform the pharmacy workflow. OPAS can be easily scaled up to expand the pharmacies’ capacities and is flexible enough to be deployed in smaller scale settings.

Finally, to top it all, the achievements of the OPAS system has received recognition at the National Infocomm Awards 2014, where it was the First Runner-up for the Most Innovative Use of Infocomm Technology in the public sector. The biennial series of national-level awards is Singapore’s highest recognition for infocomm innovation.

²National Infocomm Awards 2014: Winner for the Category of Most Innovative Infocomm Product/Solution,” IDA press release (Annex A), on IDA website, https://www.ida.gov.sg/~media/Files/About%20Us/Newsroom/Media%20Releases/2014/1124_NIA14/AnnexA.pdf, accessed on 5 January 2015.

³Fast Medication Dispensing System For Patients At Specialist Clinics And Polyclinics Win First Runner-Up National Infocomm Award,” IHiS press release, <https://www.ihis.com.sg/MediaCentre/mr/Documents/201411124%20Fast%20Medication%20Dispensing%20System%20Wins%20First%20Runner-Up%20National%20Infocomm%20Award.pdf>



Complexity Can Derail Cloud Connectivity

Simplify your cloud services with a cloud services brokerage

Moving to the cloud is an undeniable trend, but things can get complex when you have to deal with several cloud services – especially when these services span multiple providers.

Instead of managing and administering multiple cloud assets and services and having to log in and out of different applications in the cloud, your organisation can enjoy the efficiency of accessing and managing the usage through a single platform with a single sign-on.

A cloud services brokerage like ISConnect can act as an intermediary to integrate and

aggregate services from multiple providers. It can help bring different services onto a common platform, so that users get a unified experience and more easily consume cloud services.

With cloud usage consolidated, the IT department would know at any time who is actually using these resources and for what purpose, in order to follow proper security procedures. This can also optimise IT assets and usability rate as it is able to support both public and private cloud implementation.

NCS' ISConnect brokerage offers the following features:

- **Single user content and access portal.** This allows central announcements and notifications to users for group or company-wide events. It is customisable for each department, with notifications only seen by users within the department.
- **Enterprise marketplace.** This offers centrally controlled rollout of approved Software-as-a-Service (SaaS) and Infrastructure-as-a-Service (IaaS) services. There is a customisable product list for different business fronts so as to meet the local business and department requirements.
- **SaaS apps self-service.** Individuals and departments can “purchase” SaaS apps, and the IT department can charge back the cost to the department budget. The “purchasing” workflow is designed with a procurement policy and approval process in mind.
- **Product assignment.** This

allows a single view on all apps assignment to individual users and user groups, such as for new hires. The IT department can monitor apps assignment and usage from a single view.

- **Apps launcher / dashboard.** This is single sign on, allowing all apps to be assigned based on their job responsibilities. It includes both cloud and legacy apps provisioned using a single interface.
- **Reporting / billing.** There is real-time reporting on usage for individual SaaS apps and user access. Billing reports and a metering feature allows for reconciliation and charge back to departments.
- **APIs.** There is a standard set of APIs for on-boarding of SaaS or on-premise apps onto the platform, with Web Services offered via XML over HTTPS. Also supported is SSO via propriety SSO PIN, SAML 2 & OpenID for standard SSO integrations.
- **Customisations.** NCS provides a customisation service for SaaS apps to enhance functionality.
- **Enterprise Service Bus (ESB).** This allows app-to-app data integration and sharing for business usage, and enables modernisation of legacy apps by using the ESB to share and translate data for newly developed Web and mobile apps.

With ISConnect, IT departments are able to deliver tailored cloud services solutions, easily scale up, manage security and reduce operating costs – all at the same time. It provides a platform through which customers could access the power of enterprise-grade business tools, without the cost and complexity usually associated with running sophisticated software on-premise.

To find out more, email tecksun@ncs.com.sg.





Embracing the Future of Work

Changing the way you work, interact and collaborate

Organisations today face challenges communicating and executing on company strategy, as they struggle to meet the needs of the workers in this digital age. With increased information and interactions among co-workers, traditional portal metaphors are unable to adequately engage the mobile workforce of today.



manage customer information and keep track of appointments, and even access marketing collaterals, order forms and other applications.

To keep tabs on the latest news and happenings, a section on **Articles & News** provides a single place to gain all the valuable insights with content from syndicated sources or from internal repositories.

The traditional workplace portal can be:

- **Frustrating for employees to use**, with information overload, complex navigation, poor search capability and poor mobile support.
- **Difficult for content owners to govern**, as there is a constant need for fresh content, user management, content moderation, and understanding usage trends.
- **Difficult for IT to integrate, maintain and support**, as different departments have different needs. One platform is unable to support all the needs, and different skills are needed to support different solutions.

Instead, the globalised, technologically-savvy workforce of today will require more than content aggregated from traditional servers, systems, and employee self-service systems. The modern worker needs to access information quickly and easily, to collaborate with colleagues, subject matter experts and customers. It is simply not adequate to bring "Facebook" or "Twitter" into the organisation as they would want to interact and transact information readily.

Powerful Tool

The NCS Future of Work addresses all these challenges, by providing the right tools for staff in a secure manner. It is a single entry point into various corporate web services, and is supported by 3 key pillars: tools, corporate services, and social interaction and collaboration.

The **Master Dashboard** aggregates all the key information, applications and widgets that the user would need to get work done, stay informed, and interact with colleagues and customers.

Ease-of-use is a key concern in the user interface. The tools for eServices, Editing, Unified Communications, Search, Camera and Settings can be personalised by each user.

In addition, users can easily gain one-touch access to a comprehensive set of enterprise eServices and useful information such as their eLeave, make claims, check payroll, get bus shuttle information and more. With a simple click, users can also access the customer dashboard. From here, they can organise documents,

Events & Calendar can also be viewed at a glance, where users can be alerted about events through push notifications, RSVP and reminders. Driven by content, the platform promotes enterprise culture by providing event highlights, and encourages community participation through likes, comments and shares.

Another possible application is the **Community Dashboard** that engages the community, and has blogs, useful articles, social elements.

As organisations try to improve productivity, the focus should not be solely on technology. The NCS Future of Work brings together not only technical solutions, but a new way of working that enables collaboration and empowers employees with tools, shared knowledge and team cohesion, allowing for an integrated user experience for the workers of today and of tomorrow.

To find out more, contact Portal City at calvingohkh@ncs.com.sg.



The Journey Towards Achieving

Gaining visibility of and greater control over one's IT systems is key towards becoming an agile enterprise, and the efforts towards success depends not just on addressing the basics but on re-assessing the enterprise's services delivery and core IT values.

In today's complex and rapidly changing business environment, change is the only constant for corporate survival. Fuelled by mounting pressure to provide services faster than before, organisations must have the ability to sense changing market conditions and respond to new challenges as and when they arise. By turning obstacles into opportunities, being agile and adaptive, companies will gain a competitive edge over the competition in their quest for success.

Today, there exist almost every kind of applications that are able to keep tabs on all kinds of activities and transactions. Yet, organisations face difficulty in building, testing and deploying apps, chiefly because of the lack of business acumen to make sense of the complexity involved, as well as the right expertise to do a good job.

How should one implement changes in such challenging times? How can companies evolve and change so as to remain competitive and stand at the frontier of excellence?

These and other questions were raised at an exclusive lunch discussion titled "Achieving and Accelerating Enterprise Agility", hosted by CIO Asia and sponsored by NCS, which was held on 20 November 2014 at Osteria Mozza Restaurant located within the iconic Marina Bay Sands in Singapore.

Shaking the status quo

The roundtable started with Ashok Vasan, Vice President, Application

Delivery, Asia Pacific and Japan of CA Technologies, giving an overview of the relationship CA has with NCS. In fact, the two organisations have been strategic partners for well over a decade.

He then moved on to talk about enterprise agility, a state of mind that had to do with the desire to stay ahead of competition, to deliver better customer service, and to be more efficient all round.



Left to Right:
Mr Lai Weng Yew, Mr Wong Ming Fai, Mr Ashok Vasan, Mr Mayank Arora, Mr Manoj Saxena,
Mr Glenn Ang, Mr Jimmy Yeo, Mr Richard Jones, Ms Joyce Tan, Mr Zhang Jianxin, Mr Yap Cheng Hua,
Mr TC Seow, Mr Gary Pow, Mr Suresh Kumar



Organisational Agility

“Being agile is an issue of mindset,” said Ashok, as he pointed to the realisation that maintaining the status quo would not be enough to meet the demands of the fast-changing business landscape as well as customer demands. “But to be agile, one must have a core backbone of technology to help you deliver faster, to serve your customers faster, and get things done more effectively,” he added. To some extent, that agility would also involve cultural changes in

ways how things get done, he said, alluding to the fact that people resist changes that could shake their comfort level.

From CA’s point of view, every business is turning into a software business, “because every company needs software to run its business; it’s at the core of the business’s functions,” he said.

In order to achieve agility, change

must come from the top, with cascading effect down the entire organisation. It sounded simple but Ashok pointed out being agile would depend on several factors, chief of which was access to quality data and quick decision-making to put plans into action. “In order to continue to innovate, to continue to come up with new business models, you need to make those changes happen quickly,” he stressed.

Joyce Tan, Head, Information Technology, United Engineers, concurred: “My organisation is a conglomerate with many different kinds of businesses, ranging from property development to car distribution, hospitality, to cleaning services. To achieve agility, we look for solutions that could either be plugged in easily into our core systems, or leave the decision to buy or build apps at the individual business unit level because of the nature of their activities.”

As head of IT, Tan said that she had to manage user expectations and make decisions based on the benefits that a solution would bring, or how it would impact the bottom line. “We constantly look into system or solution gaps and identify what needs to be done to ensure we meet user expectations,” she said.

Jimmy Yeo, Chief Information Officer, Business IT, Asia Pacific, DHL Express Asia Pacific, also commented that dealing with complex systems often required the right skills but highlighted the point that standardisation might be the way forward. “To build apps to meet every organisation’s needs may be very costly and become very complicated as time progresses. If software could be built according to





standards, then there is no need to build it from the ground up. For some industries, there are different building blocks to make a solution," he said.

Adding his comment on business agility was Lai Weng Yew, Vice President, Business Application Services, NCS, who said: "NCS has been helping our customers to improve their business performance which, in a sense, is about being able to respond. But the question is, what are we responding to? Are we simply responding to a situation? At the front end facing the customer, that needs to be 'sensitised' to enable the business to 'sense' the information and get it into the system to speed up decision-making."

In short, without the right kind of information from the front-end, it would be difficult to figure out the appropriate course of action, he said.

More importantly, they should test and calibrate new processes against others to validate changes, and then marshal resources to act on the information collected.

The outsource conundrum

One point raised by the table was the relevance of outsourcing in relation to enterprise agility.

Asked Richard Jones, Chief Technology Officer APAC, Jones Lang LaSalle (JLL) Property Consultants: "In the past, IT was not considered as business critical but now, it would seem to be the reverse. Where does the industry stand with regard to outsourcing?" He added that outsourced business processes could hardly be able to scale to meet rising demand due to SLA terms and the nature of outsource arrangements.

Still, it was pointed out that organisations should be mindful of what constituted business-critical apps and processes, and perhaps keep these within the confines of the enterprise than to be outsourced.

Said Ashok: "Obviously, you can't outsource everything. You need to understand what's core to the business. What you need to do is to figure out what could be taken or added to your core and make sure that they fit your requirements. Decide how much is kept in house and how much isn't."

Ashok also advised that other areas like data centre infrastructure could be outsourced rather than owned. Beyond these, factors like shorter procurement cycles, rapid app development cycle and service delivery are forcing enterprises to move rapidly to meet market demands.

Standardisation was mentioned as a way to ensure tighter integration with third-party suppliers and customers, in the sense that there would be basic understanding of how things would work together. Although standards would work, others also pointed out that customers might not be embracing standards willingly because of cost.

It was acknowledged that service delivery would rely upon how quickly and successfully applications get developed, tested and delivered. Within this context, participants also raised the possibility of compromising security for agility. Ashok stressed that this would not be the case, so long as enterprises focus on three main areas: speed of delivery which could be ascertained using various metrics; app quality; and test criteria to ensure minimum viable product requirements before delivery.

Delegates at the roundtable

Mr Lai Weng Yew, Vice President, Business Application Services, NCS Pte Ltd

Mr Wong Ming Fai, Director, Information Technology, Spring Singapore

Mr Ashok Vasan, Vice President, Application Delivery Asia Pacific & Japan, CA Technologies

Mr Mayank Arora, Solution Account Director - DevOps, CA Technologies

Mr Manoj Saxena, Deputy Director, Business Information Systems, STATChipPAC Ltd

Mr Glenn Ang, Senior Manager, Web solutions & ERP Systems, Banyan Tree Hotels & Resorts Pte Ltd

Mr Jimmy Yeo, Chief Information Officer, Business IT, Asia Pacific, DHL Express Asia Pacific

Mr Richard Jones, Chief Technology Officer APAC, Jones Lang LaSalle (JLL) Property Consultants Pte Ltd

Ms Joyce Tan, Head, Information Technology, United Engineers Ltd

Mr Zhang Jianxin, Director, Management Information Systems, Dou Yee International Pte Ltd

Mr Yap Cheng Hua, Head, Group Information Technology, Portek International Pte Ltd

Mr Gary Pow, Chief Information Officer, Sheng Siong Group

Mr Suresh Kumar, T Director, Information Technology, Agility Logistics Services Pte Ltd

Ms Han Hue Nah, Senior Manager, IT Applications Hyflux Ltd

Moderator:
Mr TC Seow, Editor, *CIO Asia*



Agility is key in the application economy

Business leaders recognise that strong revenue and growth performance depends on keeping technology current and funding new innovation. In this application economy, software is increasingly being used to transform business models and drive new go-to-market opportunities. Understanding this new economy's underlying dynamics is key to staying competitive and relevant in business.

A recent study titled "Enterprise Software Modernisation And Business Performance," commissioned by CA, and conducted by Forrester Research, found that the important factor contributing to business revenue and growth is faster product and application development cycle times.

Forrester surveyed faster and slower-growth organisations based on reported year-to-year revenue and profit changes. By comparison, companies with faster growths had average product cycles that were 35 percent shorter than slower-growth companies. IT application development cycles of faster-growth companies were also 29 percent shorter. The short take-away is: business agility is the new source of business value.

The study looked at three areas of enterprise software: systems of records, which support internal operations such as HR and finance; systems of engagement, which support the acquisition, servicing and retention of customers; and systems of IT management, which support development, operations and management.

Out of the three, product cycle times are most closely linked to the level of modernisation of systems of IT management. Organisations in the top third for modernised systems for IT management had product planning and release cycles that were 15 percent shorter than those in the bottom third.

What's causing this result? Forrester writes: "Firms reporting higher levels of modernisation in their systems for IT management likely are the ones that have already invested in the tools to ensure that their technology is operating both efficiently and effectively. The visibility of and control over their systems likely allows them to react to business needs, adding the desired agility and allowing faster product cycle times."

The bottom line is: investments in keeping these foundational systems current enable longer-term flexibility for the business to respond to market changes.

The research surveyed business department leaders and IT executives and three reports clarify the underlying relationships between enterprise software modernisation and business results. Modernised software means improved agility, reduced cycle time, less maintenance and increased savings.

— Source: CA

Security versus agility

Jones also raised an issue about security and agility, citing cases where the business would want things done quickly with disregard to security.

Said Ashok: "Agility doesn't come at the expense of security. There are three areas in the agility journey where there's control. One is speed, as in the use of various metrics to ascertain how quickly, for example, to launch a new app. Second is quality of data: do you want it fast or want it clean, or both? The old way of app development is based on code releases but the baseline is security. There is minimum viable product or MVP to meet before one looks at introducing features."

Yeo from DHL Express also added that security frameworks are readily available publicly, such as the ones put forth by the Infocomm Development Authority of Singapore, or through service level agreements or SLAs from providers and telcos. "We face the same challenges too. While we talked about software development and APIs, there must be some standards that can be applied to ensure what's built is not vulnerable or susceptible to attacks."

Said Lai of NCS: "End to end security program is never finished. It's important to understand how best to protect what's mission-critical, and conduct regular tests to ensure sufficient protection."

Ashok added that in discussions about service levels, whether about customers or to the business, "security becomes a part of your DNA," he said. "In the business world where agility comes into play, it should not be a question about more security or more agility. It should be about how quickly you respond to changes, what measurements you have put in place to know where you stand, and meet the competition."



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