MEDIA RELEASE
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NGEE ANN POLY PARTNERS WITH SEVEN INDUSTRY LEADERS TO BUILD SMART LEARNING SPACES

New initiative integrates smart learning technologies and facilities to prepare students for the world of disruptive innovations

Singapore, 29 November 2016 – From April 2017, about 1,000 School of InfoComm Technology students will be among the first from Ngee Ann Polytechnic to be immersed in new Smart Learning Spaces (SLS) that will make them think, feel and breathe technology.

Industry Partners

Ngee Ann Polytechnic (NP) announced this new initiative today at the signing of Memoranda of Understanding with seven leading IT companies - Autodesk, Microsoft, Quann, SAP, S3 Innovate, ThoughtWorks and V-Key. The seven partners will bring to the table a range of technologies to enhance applied learning (see Annex A).

Smart Campus

The building of a cluster of Smart Learning Spaces is part of NP's Smart Campus initiative, which will include Technology Enhanced Classrooms, a Security Operations Centre for cyber-security training, a Digital Makers' Zone for Agile software development, and a SAP Next-Gen Lab.

Technology to support Teaching & Learning

The Technology Enhanced Classrooms will provide an immersive, technology-enabled learning environment for students. From the moment they step into the classroom, their attendance will be automatically updated via facial recognition sensors. With the help of data analytics, their lecturers will be able to get more holistic insights to optimise their students' learning and performance. Gone will be note-taking days as interactive canvasses replace conventional whiteboards, allowing transfer of lecture notes from the board directly to students' tablets. Classrooms can also be configured almost instantly to facilitate collaborative learning.

Technology to support Innovation and Technopreneurship

The SLS will support learning by creating work spaces that mirror what they may find in some of the most progressive technology companies working in the digital space.
These spaces are intended to be innovation spaces where NP can nurture the "build fast, fail fast and learn fast" mindset and help students appreciate the speed of technological change, disruptive innovations and emerging skills. In addition, the spaces are also intended to

evolve as students integrate their learnings from existing classes in UI/UX, cloud computing, mobile software, API development, cyber security, Internet of Things, data analytics and visualization, design thinking, etc into portfolios of projects and prototype solutions to real life problems.

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KEY CONTRIBUTIONS BY THE SEVEN IT INDUSTRY PARTNERS:

- **Autodesk** will train NP staff and students to leverage its leading 3D design software for architecture, engineering and entertainment to promote professional development, industry development, and innovation. Autodesk will also provide staff and students with free access to its full product portfolio including Autodesk Fusion 360, and support for the setup of the Digital Makers' Zone located in the SLS.

- **Microsoft** will support NP in adopting new technologies through knowledge transfer, e.g. Microsoft Windows 10, Microsoft Office 365, Microsoft Azure services and APIs for software development. Microsoft will also support teaching staff in pedagogical development towards teaching with technology, as well as support in the development of an ecosystem to drive and sustain innovation in the SLS. Microsoft will work with NP to jointly organize hackathons to promote a culture of innovation in the students.

- **Quann** will provide NP with expertise in developing Security Operations Centres (SOCs), training students to operate in a next-generation SOC to handle real-world security scenarios and share their experience in managing cybersecurity incidents. Quann will also provide use of their proprietary SOC platform tools e.g. Cyclops security incident event management (SIEM) software, intrusion detection system (IDS) and Threatcon software. In addition, Quann and NP will jointly design, develop and deliver curriculum for full-time and continuing education students.

- **SAP** will provide NP with use of SAP software and teaching curricula offered by its University Alliances program for academic research and teaching purposes, e.g. SAP HANA Express edition, SAP HANA Cloud Platform Developer account and S4HANA and Business Analytics tools. SAP will also establish a SAP Next-Gen Lab in the SLS, the first in S-E Asia, where students will apply their knowledge in capstone projects given by customers to solve real business challenges caused by disruptive technologies.

- **S3 Innovate** will offer their capabilities in Internet of Things (IOT) and Data Analytics through consultancy to design and architect the SLS projects and smart applications. S3 Innovate will also advise NP on IOT technology in the curriculum for the full-time and continuing education students.

- **ThoughtWorks** will advise NP on creating a positive software development and makers' culture among staff and students with emphasis on User Experience (UX) and Agile Principles, Methods & Practices. ThoughtWorks will also bring in industry insights into the software development and UX curricula meant for full-time polytechnic students and continuing education training for industry professionals.

- **V-Key** will advise and provide their product APIs at no cost to allow faculty staff and students to develop innovative solutions for their academic portfolio and capstone projects. V-Key will also conduct guest lectures for staff faculty, full-time polytechnic students and/or continuing education training for industry professionals.

BOILERPLATES AND QUOTES

About Ngee Ann Polytechnic

Inaugurated in 1963 as Ngee Ann College with only 116 students, Ngee Ann Polytechnic is today one of Singapore's leading institutions of higher learning with nearly 15,000 full-time students, about 2,000 part-time students and an alumni community of over 130,000.

The polytechnic offers 49 full-time courses through its nine academic schools - School of Business & Accountancy, School of Design & Environment, School of Engineering, School of Film & Media Studies, School of Health Sciences, School of Humanities & Social Sciences, School of InfoComm Technology, School of Interdisciplinary Studies, and School of Life Sciences & Chemical Technology. Ngee Ann supports Continuing Education and Training (CET) through its CET Academy which offers a wide range of part-time programmes. The Polytechnic has also established two Centres of Innovation - in Environmental & Water Technology and Marine & Offshore Technology - to work on collaborative research and technology projects.

Learning takes place amid a caring and conducive environment with top-notch facilities ranging from broadcast, multimedia and animation studios to research laboratories as well as simulation and technology centres. With our emphasis on a broad-based education, coupled with our signature Service-Learning pedagogy and global exposure, Ngee Ann Polytechnic's vision is to prepare graduates with a passion for learning, values for life and competencies to thrive in a global workplace.

For more information, please visit www.np.edu.sg.

"Ngee Ann Polytechnic is excited about embarking on this milestone initiative of building a cluster of Smart Learning Spaces as part of our Smart Campus vision. We are collaborating with global tech giants and local innovators to provide an immersive technology-enabled learning environment for our students, and nurture a culture of innovation as we prepare them for the digital economy."

Mr Clarence Ti, Principal of Ngee Ann Polytechnic

About Autodesk

Autodesk makes software for people who make things. If you've ever driven a high-performance car, admired a towering skyscraper, used a smartphone, or watched a great film, chances are you've experienced what millions of Autodesk customers are doing with our software. Autodesk gives you the power to make anything. For more information visit:
Autodesk - www.autodesk.com or follow @autodesk
Fusion 360 - http://www.autodesk.com/products/fusion-360/overview
Free access - http://www.autodesk.com/education/free-software/featured

"Today if you can imagine it, you can make it. We want to inspire and equip the next generation of innovators and inventors in Singapore to unleash their creativity and bring their ideas to life by providing students, teachers and schools with free access to our design tools and the platforms to showcase their talent."

Mr Conway Goh, Senior Education Manager in Asia Pacific, Autodesk

About Microsoft

Microsoft (Nasdaq "MSFT" @microsoft) is the leading platform and productivity company for the mobile-first, cloud-first world, and its mission is to empower every person and every organisation on the planet to achieve more. For news about Microsoft in Singapore, join the conversation on Twitter. Follow us at @Microsoft_SG.

"At Microsoft, we believe that fostering talent for tomorrow's economy is critical for a sustainable Smart Nation, and this starts with empowering our youths and educators with the ability to leverage technology confidently and effectively. By partnering Ngee Ann Polytechnic to enable knowledge-sharing on new technologies, pedagogical development for educators to teach more effectively with technology, and the organisation of joint hackathons, we can collectively work towards equipping our youths with relevant 21st century skillsets, and fostering a healthy culture of innovation for them to be future changemakers for the nation."

Foo Jong Tong, Public Sector Director, Microsoft Singapore

About Quann

Quann, formerly known as e-Cop, is a homegrown cyber security services provider and a business unit of Singapore's leading security organisation, Certis CISCO. Quann has been in the cyber security business for over 15 years, and has evolved from being a Managed Security Service Provider serving Singapore-based enterprises and government agencies, to a leading regional cyber security services provider with an extensive Asian footprint. It is currently one of the largest cyber security service providers with multiple ISO/IEC 27001 certified, in-country next-generation Security Operations Centers (SOCs) in Asia that help organizations detect, prevent and respond to cyber threats. Quann's next-generation SOCs operate on its proprietary patented technologies which provide real-time, advanced detection and big data analytics to swiftly alert clients to both known and unknown threats. The company is headquartered in Singapore and has regional offices in Malaysia, Hong Kong, Thailand and India. It has a workforce of over 300 certified security professionals with the skills and knowledge in designing, validating and managing security solutions, as well as providing incident response and forensic analysis.

"Education and training are crucial in developing qualified ICT talent. The cyber security industry is experiencing a chronic talent shortage because the demands from greater interconnectivity and increasing complexity in the cyber-threat landscape have grown faster than supply. I am excited at the opportunity for Quann to help groom the next generation of cyber-security professionals. Quann will do this by bringing cutting edge solutions, our proprietary SOC operations technology and the latest industry knowledge into their classrooms. In addition, the best way to internalise these skills and instincts is through immersion. This is why we are welcoming NP ICT students on internships where they take on real-time real-world cyber security challenges alongside Quann's cyber-security professionals."

Mr Foo Siang-Tse, Managing Director, Quann

About SAP

As market leader in enterprise application software, SAP (NYSE: SAP) helps companies of all sizes and industries run better. From back office to boardroom, warehouse to storefront, desktop to mobile device – SAP empowers people and organizations to work together more efficiently and use business insight more effectively to stay ahead of the competition. SAP applications and services enable approximately 335,000 business and public sector customers to operate profitably, adapt continuously, and grow sustainably. For more information, visit www.sap.com.

"The SAP Next-Gen Lab at NP will enable SAP customers to seed innovation into their organizations whilst simultaneously nurturing young minds and contributing to the development of our future workforce. Together with the students, companies can use these projects as a test bed to experiment with new innovations which can accelerate their digital transformation."

Mr Darren Rushworth, Managing Director, SAP Singapore

About S3 Innovate

S3 Innovate is a Singapore-based high tech company that supports cities on their Smart and Sustainability journey. Through Innovative and Green Internet Of Things technologies, we aim to enhance the performance of cities' assets such as buildings and infrastructure and transform experiences for citizens and the community.

"S3 Innovate is honoured to partner with Ngee Ann Polytechnic to co-develop and deploy Smart Internet Of Things technologies into its campus and share our industry experiences with its students. We believe this partnership to build the Smart Learning Spaces will support Ngee Ann Polytechnic's drive towards enriching student learning experiences."

Mr Nicholas Soon, Director, S3 Innovate

About ThoughtWorks

ThoughtWorks is a global tech consultancy, 4000 people strong across 40 offices in 14 countries. We are a collection of passionate people who care about technology. At our heart, we are a custom software company and a community of designers, strategists and industry experts who solve complex problems.

"ThoughtWorks is honoured to partner Ngee Ann Polytechnics in its plans to achieve Singapore's Smart Nation vision. As a global technology consultancy driven by people, passion and innovations, we look forward to sharing our agile and software engineering expertise to groom the next generation of young talent into world-class IT professionals. We will help to cultivate the right culture and mindset to equip them with the latest technological skills to meet today's IT market demands. These will be essential capabilities that will help them be successful in the growing digital economy."

Ms Jessie Xia, Managing Director – Singapore, ThoughtWorks

About V-Key

V-Key is a global leader in digital security. We work with some of the world's top banks, mobile payment providers, as well as with governments to secure their customer and user data. We allow businesses to roll out cloud-based payments, trusted authentication for mobile banking, and other secured mobile applications for user data protection without the need to use any form of hardware secure elements. We do this with our patented cryptographic solution V-OS, which is the world's first virtual secure element. V-Key's solutions are certified by leading industry bodies including FIPS 140-2 (USA), and Info-communications Media Development Authority of Singapore. It has been rigorously stress tested by the likes of global analysts, e-commerce players, government agencies and regulatory bodies globally, including Ant Financial Services Group and Deloitte, among others. V-Key was founded in 2011 and is headquartered in Singapore. Visit our website www.v-key.com or follow us on Twitter @vkey_inc for more information.

"V-Key has provided a platform including a software development kit (SDK) and an application programming interface (API) for securing students' digital identity, authentication and transactions, which means that students at Ngee Ann Polytechnic will be able to rapidly connect with developers, other students at the school, and external organisations, to build innovative mobile client solutions faster and more securely than ever before. The SDK marks an evolution in combining real life with campus technology, allowing unparalleled collaboration and partnerships to benefit students' hands-on learning."

Mr Benjamin Mah, Co-Founder & Chief Executive Officer, V-Key

SMART LEARNING SPACES @ NP

From Technology Enhanced Classrooms that support teaching and learning to specialised facilities that drive innovation and technopreneurship, the Smart Learning Spaces at NP will be an immersive technology-enabled learning environment to prepare students for the new digital economy.

Here's a glimpse into what the campus of the future will look like.

INTERNET SAFETY

NP

Students are trained to operate in a **Security Operations Centre** and get to handle real-world security scenarios. Students are also trained as White Hat Ethical Hackers.

Students benefit from specialised facilities such as the **SAP Next Gen Lab** and the **UX/UI Observation Room**.

Open learning spaces encourage collaboration and innovation.

Technology enhanced classrooms are outfitted with state-of-the-art equipment to maximise the student learning experience.

With the help of **data analytics**, their lecturers will be able to get more holistic insights to optimise their students' learning and performance.

Innovate and create digital products at the **Digital Maker's Zone**.

Source: Ngee Ann Polytechnic Corporate Communications Office