



The Computerworld Honors Program

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Final Copy of Case Study

Status:

Laureate

Year:

2013

Organization Name:

City University of Hong Kong

Organization URL:

www.cityu.edu.hk

Project Name:

University Paperless Office Project

Please select the category in which you are submitting your entry:

Sustainability

Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)

Founded in 1984, CityU is a comprehensive research university, ranking 95th worldwide (2012 QS Rankings) and 9th among the world's young universities. Social responsibility and sustainability has always been an important priority. CityU's 2010-2015 Strategic Plan emphasizes that education and research must be provided in a manner that balances growth with social responsibility and sustainability. In 2010, the University Council (Board of Regents) established a "Social Responsibility Committee," making us the first locally to place social responsibility at such a high level. In 2011, a "Charter of Social Responsibility" and an "Environmental Policy" were established to ensure all University activities are conducted in an environmentally responsible manner. The "University Paperless Office Project" is part of this commitment to sustainability. Launched in 2011, this enterprise-scale development project uses ECM technology to reduce paper and space consumption and at the same time improve efficiencies in our administrative processes as well as information security; the budget was US\$1.4 million. The first users are the HR and Finance offices. With the university's rapid growth and

expansion, these offices have been faced with numerous business challenges, including the need to streamline services and optimize workflows, as well as shortage of physical space to store an increasing number of personnel and finance documents relating to over 4,000 current staff and a huge archive of former staff. Information security is also an important issue. This project provides a modern and innovative DMS solution, built on top of EMC Documentum, to handle these challenges. Having documents in secure digitized archive allows us to save time in decision making, save trees and space, and greatly enhance security. The initial cost savings for HR and Finance alone is over US\$0.5 million per year, recovering project cost in less than 3 years.

When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)

Project started early 2011 as departmental pilot project among College of Business, Human Resources Office, and Finance Office. Objective was to explore modern document archiving technology and how it might improve efficiencies as well as provide a greener campus. Based on results of the pilot, the "University Paperless Office Project" was then approved by the President's Cabinet and established as an official University-level project in August 2011 with the formation of the Enterprise Document Management Team (EDMT) within the University's Central IT organization. The initial scope of the Project consists of 3 stages spanning two years. The first stage involves creating the core infrastructure and capabilities for the HR and Finance offices to archive personnel and payroll records. This phase was successfully completed and deployed in June 2012; the system is now used by over 100 administrative users. For HR, their immediate task is to convert their physical archive of over 8,000 personnel records from paper to digital form and to facilitate their use in various workflows and processes. The first priority is to process current full-time staff, which numbered over 3,500. So far, over a thousand personnel folders have successfully been processed and archived into our system. For Finance, their first task is to digitize their payroll files. Roughly 8,000 payroll folders have to be processed. To date, the Finance office has successfully converted close to 3,000. The system is sized to handle a total of roughly 1.3 million documents in the first year, and then a subsequent growth of over three hundred thousand additional documents per year, just for HR and Finance offices. Previously, paper documents were photocopied whenever personnel decisions had to be made. With this system, millions of pages of paper can potentially be saved each year.

Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)

The project consists of 3 stages over two years: Initial phase – design and build the core IT hardware and security infrastructure; deliver a core set of foundation content technologies, including library services, basic workflow, search and records management to selected departments/units; integration and streamlining of scanning technologies. Second phase – design and develop additional capabilities to streamline day-to-day tasks and operations for HR and Finance office staff; enable collaborate among staff within and across departments. Third phase – significant expansion on the system to support academic and other administrative units with over a 1,000 users total;

provide business process management (BPM) capabilities that integrate content with back-office applications and process flows. Phase 1 was successfully completed and deployed in June 2012. We are currently working on Phase 2, which is targeted for deployment by March 2013. Following the principle of "create once, use many," the main objective of phase 2 is to streamline and optimize the distribution of documents in daily work and process flows. This will eliminate the previous need for departments to photocopy copies of sensitive documents that are used only for a short period of time to support meeting/committee discussions or decision making, eliminating tremendous paper waste. The scope of document archiving in the second phase is expanded to include additional types of documents as well as additional standardization and more controls in the process to help eliminate duplication and errors that can crop up when maintaining filing cabinets. Subject matter experts were appointed by individual departments to define a standardized taxonomy/structure and keep the design simple and practical when sharing documents across departments.

Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)

Benefits to the university and environment are numerous: Minimize paper consumption – with DMS, we estimate that the need for photocopying will be greatly reduced if not eliminated, saving over a hundred trees per year, just for the HR and Finance offices alone. Optimized space utilization – with electronic filing, essential paper documents can now be archived in cheaper remote warehouses instead of the current prime office space, reducing rent as well as freeing up much needed space for University expansion. Significant time savings – the university estimates over 6 times or more performance improvement in performing document filing and retrieval. The value of instantaneous online search compared with manual sifting through piles and piles of paper documents cannot be overestimated. Minimize archiving – through detailed analysis and review of current record-keeping practices, new guidelines on document retention were developed, resulting in a 30% decrease in types of document that need archiving. Increased security – with controlled file access through a highly security environment, information security is greatly improved, creating better audit trails of document access. These benefits represent cost savings of over US\$500,000/year. Future phases and expanded use will bring additional savings. Prof. Arthur Ellis, Provost, commented: "The University Paperless Office Project is aligned with our campus's Strategic Plan. It leverages advanced technology to save time, money, space, and natural resources." Ms. WY Wong, HR Executive Officer, commented: "When the documents were stored in hardcopy, a large amount of clerical effort is needed to photocopy and physically transfer documents from building to building, as well as sorting through pages and pages of document to tag them with post-it notes for review. This workload is particularly serious during periods of annual review. With DMS we can now access employee information whenever needed at our desks without any delay."

Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)

This project is innovative at several fronts: CityU is the first university in HK to implement an enterprise-grade ECM/DMS, providing enterprise-quality IT infrastructure and security as well as integration with the university's ERP system. Others have collections of isolated small-scale departmental DMSs that are not integrated with ERPs. This is due to CityU management's commitment in sustainability and leveraging technology to streamline e-business. CityU is also the first University in Asia-Pacific region to implement EMC Documentum to store highly sensitive HR and financial information. We are able to do so because of the solid information security management framework that we have put into place that is compliant to ISO27001 requirements using best-of-breed technology. Regionally, we are also the first university to lead the digitization and archival of HR personnel records for long-term preservation. Another innovation is in our unique system design. Using a collection of features, such as Data Matrix 2D barcodes, we were able to streamline overall scanning and archiving process to minimize data entry errors as well as automate integration with ERP. Each barcode is unique and associated with an individual staff. Barcodes on cover sheets for scanning allow system to automatically associate a set of meta-data to the document as well as automatically link document to staff records in ERP, thus eliminating data entry errors. This greatly shortens time needed to digitize and tag documents. The automated integration with ERP also provides parameters to control access to imaged personnel files, thus protecting them from being altered or deleted by unauthorized persons. Our barcode system has been fine-tuned to work with a wide variety of different brands and models of scanning devices to maximize throughput in scanning large volumes of documents in parallel.

If there are any other details that the judges should know about this project, please note them here. (In 300 words or less.)

The "University Paperless Office Project" is a priority project for the University and one of the largest enterprise application development projects in recent history. Besides the sustainability and efficiency benefits on the business side, the university also looks towards the project to provide a model for future enterprise system development, in terms of its IT architecture, development process, service management, as well as information security. The project was designed to follow international best practices in software development, service management and information security management. Specially, we targeted two families of standards to ensure quality of IT service and information security: BS ISO/IEC 20000 Information Technology Service Management System and BS ISO/IEC 27001 Information Security Management Systems. Similar to other quality management systems, both of these ISO standards emphasize on ensuring the consistency and continuous improvement of services. To date, an Integrated Management System (IMS) has been designed for the Paperless Project and is currently under implementation. Several rounds of training, both awareness as well as implementation, have been organized. Key project members have also undergone ISO 20000 and ISO 27001 Internal Auditor and Lead Auditor trainings. Our current schedule is to submit our system to a certification body for ISO 27001 external audit and certification in March 2013, and ISO 20000 external audit and certification in December



2013. Dr. Andy Chun, CIO, commented: "This project sets a model of technology excellence for future IT projects to follow, adopting industry best practices in software development, information security as well as service management." It is hoped that this project will further promote green IT culture as well as modern e-business best practices across all administrative and academic units.