From 'Digitization Without Direction' to Digital Journey: Discovering the Path to Success

North York General Hospital persistently pursues change. For the past several years, the Toronto-based healthcare provider has been implementing information systems in a quest to improve clinical care, reduce costs and enhance the overall patient experience.

'Our digital transformation has been a multiyear journey that we update annually by looking out to the future and predicting what's on the horizon for the next three years', said Sumon Acharjee, Chief Information Officer at North York. 'The hospital is moving to a common electronic records system. By doing so comprehensively and on a unit-by-unit basis, we can experience clinical transformation'.

The Canadian hospital is not alone in this effort. In fact, healthcare organizations around the globe are in various stages of digital transformation, as they're moving away from paper and adopting a variety of systems such as electronic medical records and laboratory, pathology and radiology solutions. 'Hospitals need to move away from paper and make information digital', said Laura Pietromica, Lead Customer Advisor, Global Healthcare Sales and Services at Hyland Software. 'By having this information readily accessible, they not only provide the clinicians with what they need when treating patients, but also leave them in a better position to start thinking of interoperability and data sharing'.

The global healthcare information technology solutions market continues to expand, according to a variety of studies showing that the move toward electronic systems is accelerating:

- The healthcare IT market will be worth $280.25 billion by 2021, growing at a compound annual growth rate of 15.9 percent, according to a forecast by research firm MarketsandMarkets. This growth is attributed to the increased focus on quality of care and clinical outcomes, emergence of accountable care organizations and rise in use of big data analytics.[1]

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- A report from iHealthcareAnalyst estimates that the global health information technology market will reach $223 billion by 2021, increasing at a compound annual growth rate of 11.7 percent from 2017 to 2021, because of the rising incidence of chronic diseases such as cancer, cardiovascular, diabetes and respiratory illnesses.[2]

Drowning in data

Healthcare, of course, is part of the wider digital transformation that is occurring across industries. Business author Bernard Marr notes in *Forbes* that 'experts are predicting a 4,300 percent increase in annual data production by 2020'. As such, he points out that a 'company's ability to compete will increasingly be driven by how well [they] can leverage data, apply analytics and implement new technologies'.[3]

Healthcare organizations are digitizing, but many are implementing systems randomly. In fact, 'digitization without direction' has led to IT sprawl. Many healthcare organizations across the globe find themselves juggling a plethora of systems as various departments buy their own software applications (known as shadow IT); the IT department buys or builds niche applications for each business area without an overall strategy; or IT purchases technologies with overlapping functionalities, sometimes inadvertently.

Such IT sprawl has become a challenge for Mater Misericordiae Health Services. The Brisbane, Australia-based healthcare provider has adopted some 1,500 applications over the past several years, said Sallyanne Wissmann, Director, Information Management. 'If it was deemed to be something that part of our business needed, then we have just gone ahead and purchased it, and, in some instances, IT staff were well engaged in that process. Other times they were not'. Wissmann said.

Hospitals and health systems across the globe experienced similar challenges as they moved toward more digitization. Much of this IT sprawl occurred because leaders 'didn't realize the impact disparate systems would have on their organization', Pietromica said. 'All of a sudden, a department would say, "Oh, we found this really cool diabetes management software - we want to get it", and nobody realized that it couldn't integrate, share or communicate with other systems. Today, organizations are more aware and ask more questions than they did 20 years ago'.

Now, instead of being able to optimally leverage data, healthcare organizations struggle to navigate it. Information system end users — from clinicians to executives to front-line staff and others — are wasting time and resources simply trying to find, store and manage data. In fact, more than 60 percent of organizations report that their staff members spend an extensive amount of time simply trying to find content, according to a report from AIIM.[4] In addition, a study from the McKinsey Global Institute found that employees spend an average of 9.3 hours per week searching for and gathering information.[5] Organizations are also likely to experience duplicative efforts regarding content creation - i.e., too many emails, too much single-use content, unneeded and excessive printing and insecure content that's not controlled for access. According to recent AIIM research, 40 percent of organizations are dealing with multichannel inbound content in an ad-hoc manner (both paper and electronic), while 36 percent indicate they print their electronic inbound information and process it as paper. All of this can lead to declining customer satisfaction, inefficiency and increased system complexity.[6]

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Senior Customer Advisor, Global Healthcare Sales and Services, Hyland Software

In the healthcare realm, clinicians, consultants, nurses, allied health professionals and administrators need access to patient information to make informed and accurate patient care decisions. Unless systems interconnect, it's difficult for clinicians to find needed information, making IT sprawl especially vexing for them.

Amanda Blase, a Senior Customer Advisor for Global Healthcare Sales and Services at Hyland Software, agrees clinicians quickly become frustrated when IT sprawl slows them down and makes it more difficult to do their jobs. 'Having duplicate information in multiple systems is not good. The goal always is to have one source of truth', Blase said. 'With multiple systems, clinicians can get lost. They are using all of these different systems and don't know where to document or find things. It's hard for them to remember where they are, what to do and how to retrieve information. So, it's very common to see clinicians become frustrated with the variance that occurs'.

Even more troubling, when information is difficult to access, the quality of patient care could suffer. 'When clinicians are not able to find the information they need to make informed care plans, they run the risk of making medication errors or ordering duplicative labs and imaging studies. Lack of information also results in inconsistent and less effective patient care, which leads to unhappy patients', Pietromica said.

When a clinician cannot find a test result, it's likely that another test will be ordered — a costly move for the healthcare organization, insurance company and patient. And, when organizations operate many systems, they are vulnerable to security risks. 'Some security breaches are the result of unmonitored, old or unsupported software', Pietromica noted.

Cutting the fat

As these problems proliferate, the need to curb IT sprawl grows ever more apparent. Many healthcare organizations, however, choose to stay on this path simply because they can. 'Even though it may not be the most cost-effective or efficient way to do business, healthcare organizations are able to keep going without disruption' with the systems and the implementation practices they have in place, according to Blase.

In fact, Blase added, 'Doing nothing almost feels safe because all the end users know their particular system or systems. So, a project to consolidate IT sprawl can be intimidating because it means not only having to incur the IT expense but needing all the end users to learn how to use the new system as well'.

Although the path of least resistance may appear to be the most manageable route, organizations could suffer in the long run, Blase pointed out. By ignoring sprawl, organizations will have to deal with siloed systems that don't exchange information, forcing users to cope with duplicate information housed in multiple systems.

Leveraging EMRs to house disparate information can help, but it often doesn't completely solve the IT sprawl juggernaut. 'The EMR is great at capturing discrete pieces of information ... but there are still reports that may be faxed from an external lab or that a patient has brought in from another provider', North York's Acharjee said.

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Director, Information Management, Mater Misericordiae Health Services

Proceeding with purpose

Many healthcare organizations realize that now is the time to engage in more purposeful digital journeys. Therefore, leaders need to make decisions based on where they want their organizations to be in the future — and strategically move to digital transformation.

Such efforts are unfolding at Mater Misericordiae. Instead of using assorted independent IT initiatives, the provider is now working from a comprehensive digital transformation playbook. 'Earlier this year, we released our digital strategy, which is a document that we developed after thorough consultation within the organization', Wissmann said. 'In the past, we have had IT strategic plans, but this is a digital roadmap that spells out how we'll use digital technology to better enable our services and support our lines of business as well as our partners outside of the organization. So, as new requests come along, they are being actively assessed against the principles and the intent of that digital roadmap'.

Such planning enables organizations to anticipate future data, information system and infrastructure requirements, making it possible to meet industry and business needs. 'It is important to plan for the future to ensure you have an infrastructure that is sustainable, easy to maintain and cost-effective – but that is also flexible and scalable so that it can grow with your organization. Having fewer hardware and software systems to maintain allows IT staff to cross-train for better planning, support and maintenance. It is also cost-effective and easier to prevent and detect security threats', Hyland Software's Pietromica said.

In addition to a governance structure, healthcare organizations need a communication plan. This can enable the 'IT department to communicate with all of the different departments looking for hardware and software solutions. It will be able to assess what the needs are and determine if any existing software solutions or hardware may be repurposed before investing in a niche system', Pietromica said.

While strategic planning helps organizations secure the technology needed to meet future goals, for true transformation, healthcare organizations must address their IT sprawl. The first step? The IT department needs to survey what systems are currently in place throughout the organization. 'They need to not only include the systems they've purchased and implemented, but they also must go into every department to find out who maintains systems outside of IT, who's got an off-network Access database under their desk. Finding out is really eye opening. These "shadow applications" are really just a byproduct of being human. It's in our nature to want to control our own information, our own charts, our own data', Pietromica said.

As part of their strategic digital-transformation journey, Mater Misericordiae is consolidating their IT systems by 'developing a standardized approach to bringing information systems into the organization with more stringent governance processes in place', Wissmann said.

Besides leveraging the road map to bring in the most valuable new systems, Mater Misericordiae is taking a current inventory of systems. In doing so, the organization will determine which applications users regularly access and if there are redundancies in systems or capabilities.

"Content management systems can help organizations take advantage of work flow and better meta-tagging of information so that we can present more concise or organized information going forward."

Sumon Acharjee
Chief Information Officer, North York General Hospital

'We are trying to identify those applications that we have duplicated in terms of functionality and those that could be rationalised or migrated with other applications and eliminated', Wissmann explained. 'We are conducting an objective assessment to identify those systems that are no longer required and could be decommissioned'.

To accomplish this, Mater is using a questionnaire that has been developed to uncover the relative worth of each IT application. 'Business owners and users of the system answer questions to determine if the system is something that the organization still needs. For example, "Is it fit for its purpose? At what point do we keep investing in the system? Do we need to replace it? Do we need to amalgamate it with something else? What have we got at the moment? And what value are we getting out of that?" All of this will tell us how can we streamline our current investments in cost and efficiency', Wissmann said.

Making the most of the data

In addition to more purposefully purchasing, implementing and managing systems according to a well-thought-out strategic plan, organizations find they need to identify and implement solutions for the express purpose of making it possible to fully leverage data.

'Organizations will eventually get to that tipping point when all the information is there, but it all looks the same — like one big blob', Acharjee said. 'The understanding of data evolves over time, and organizations need a system that will help capture data, classify it, organize it and present it at the right place, at the right time. Content management systems can help organizations take advantage of work flow and better meta-tagging of information so that we can present more concise or organized information going forward'.

Wissmann agrees that the digital journey will eventually lead her organization, and others, to more strategically manage all of their data with a content management system. Currently, the healthcare organization uses a content management system to support a central online repository of scanned clinical information, integrated into an existing clinical portal, which displays clinical information from multiple sources.

As healthcare organizations continue their digital transformation, though, they expect to move to a comprehensive enterprise content management system that will integrate, manage and organize electronic information culled from various IT systems. With such a system in place, all content — incoming or outgoing — is funneled to a centralized content repository, irrespective of source device, location or type of content. Ideally, the enterprise content management system would capture, store and manage IT web assets uploaded to a healthcare organization's on-site company database in the same fashion as it would a remote home health nurse's Microsoft Word document or a C-level executive's spreadsheet emailed via smartphone while on a business trip. 'It's an application that will aid us on our digital journey and help future proof us', Wissmann said.

Ideally, the enterprise content management system has the ability to manage content, processes and cases on a single platform. In addition to its ability to meet future needs, it must minimize IT sprawl by decreasing the number of systems that organizations need to manage while reducing data silos and disconnected applications. In Mater Misericordiae's case, their enterprise content management system, OnBase by Hyland Software, offers a number of benefits to help organizations meet future digital transformation goals. The system is:

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>
> **Sumon Acharjee**

- configurable without code. Point-and-click configurability with check boxes, radio buttons and drop-down menus make it easy for IT staff or system administrators to quickly configure and change solutions without expensive, time-consuming and difficult-to-maintain coding or scripting.
- scalable across the organization, making it possible to meet evolving needs and to grow over time as the digital transformation efforts expand.
- continually enhanced with 100 percent in-house development, ensuring that software remains relevant with evolving industry trends, stays current with technological innovations, and supports the latest operating systems, browsers and applications.
- easily upgradable. And, because all solution components can be upgraded together, it eliminates the challenges of upgrading multiple custom-coded or point solutions.

Using an enterprise content management system as an information hub offers many benefits. Such a system can enable healthcare organizations to:

- capture content in one location;
- automate workflow processes;
- provide easy access to information from desktop computers and mobile devices;
- integrate with existing business applications to extend their value;
- securely store and back up structured and unstructured data;
- support organizational goals such as reducing operating costs and improving productivity;
- update data in real time across applications; and
- enable collaboration and connectivity through mobile and cloud-based technologies.

When healthcare organizations approach digital transformation in a strategic, rather than an ad-hoc manner, and fully leverage content management solutions to better control data, they can rest assured that their staff members will be able to do their jobs better. That's especially important when clinicians are providing potentially life-saving treatment and service to patients.

'As digital journeys unfold, it's important to always concentrate on supporting the clinical efforts of your organization', Acharjee said, adding, 'It's especially important to provide clinicians with fingertip access to as much information as possible at the time when they are making their decisions and evaluations. You need to keep the clinicians acutely focused on their patients — and away from wasting time going through the various, disparate information systems in your organization just to find information. That's why content management systems are so important'.

[1] "Healthcare IT Market by Product (EHR, RIS, PACS, VNA, CPOE, HIE, Telehealth, Healthcare Analytics, Population Health Management, Supply Chain Management, CRM, Fraud Management, Claims Management) End User (Provider, Payer) - Global Forecast to 2021," *MarketsandMarkets*, March 2017, http://www.marketsandmarkets.com/Market-Reports/healthcare-it-252.html.
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3. Bernard Marr, "Big Data Overload: Why Most Companies Can't Deal with the Data Explosion," Forbes, April 28, 2016, https://www.forbes.com/sites/bernardmarr/2016/04/28/big-data-overload-most-companies-cant-deal-with-the-data-explosion/#5ca6f4d26b0d.
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[6] Larrivee, "Thinking in New Dimensions," May 2016.

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