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Social Innovation

Welcome to the July 2012 issue of the *Technology Innovation Management Review*. The editorial theme of this issue is Social Innovation. We invite your comments on the articles in this issue as well as suggestions for future article topics and issue themes.

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Overview

The *Technology Innovation Management Review* (TIM Review) provides insights about the issues and emerging trends relevant to launching and growing technology businesses. The TIM Review focuses on the theories, strategies, and tools that help small and large technology companies succeed.

Our readers are looking for practical ideas they can apply within their own organizations. The TIM Review brings together diverse viewpoints – from academics, entrepreneurs, companies of all sizes, the public sector, the third sector, and others – to bridge the gap between theory and practice. In particular, we focus on the topics of technology and global entrepreneurship in small and large companies.

Upcoming Issues

- *August*: Entrepreneurship in the 21st Century
- *September*: Living Labs
Guest Editors: Seppo Leminen and Mika Westerlund

We welcome input from readers into upcoming themes. Please visit timreview.ca to suggest themes and nominate authors and guest editors.

Contribute

Contribute to the TIM Review in the following ways:

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Editorial: Social Innovation

Chris McPhee, Editor-in-Chief

Stephen Huddart, Guest Editor

From the Editor-in-Chief

Welcome to the July issue of the TIM Review. This month's theme is Social Innovation and it is my pleasure to welcome our guest editor, **Stephen Huddart**, President and CEO of the J.W. McConnell Family Foundation (mccconnellfoundation.ca), who has assembled a wonderful line-up of authors to share their experiences and insights in this issue.

This issue also includes a report on a recent TIM Lecture by **Giovanni Pizzoferrato**, Senior Manager, Technology Strategy TELUS, who spoke about the approach to innovation used by TELUS in developing products and services for the healthcare market.

In August, the theme is Entrepreneurship in the 21st Century, and then in September, **Seppo Lemin**, Principal Lecturer at the Laurea University of Applied Sciences, Finland, and **Mika Westerlund**, Assistant Professor at Carleton University's Sprott School of Business, are guest editors for an issue on Living Labs. If you would like to contribute an article to the August or September issues, please contact us (timreview.ca/contact) immediately to discuss possible article topics related to these themes.

As always, we welcome your feedback, suggestions for future themes, and contributions of articles. We hope you enjoy this issue of the TIM Review and will share your comments on articles online. Please also feel free to contact us (timreview.ca/contact) directly with feedback or article submissions.

Chris McPhee
Editor-in-Chief

From the Guest Editor

The theme of this issue is social innovation, as enabled by technology. With the advent of the Internet and the exponential growth in computing power, social entrepreneurs and communities have applied these capacities to expand human ability and to address problems previously beyond solving – from creating Wikipedia to mapping the human genome.

The articles collected in this issue of TIM Review are representative of such work taking place today in Canada, but readers elsewhere will recognize similar patterns from their own countries. Indeed, one of the characteristics of technology-enabled social innovation is that it readily transcends boundaries – political, sectoral, and those between experts and citizens. In doing so, a source of new innovations is generated.

The first article examines the shift from social innovations to social innovation systems, which are designed to replace maladaptive institutions and obsolete policy frameworks with novel and disruptive means for improving outcomes. Continuous cycles of implementation and learning could be achieved if tools and processes for social innovation were made available to community organizations and their government and business partners. Finally, the article introduces Innoweave, a technology-enabled social innovation system for sharing the tools and processes of social innovation with the community sector, as an example of the type of system that can promote multi-sectoral participation and continuous social innovation around complex problems.

Next, **Michael Lenczner**, CEO and founder of Ajah, and **Susan Phillips**, Professor and Director of the School of Public Policy and Administration at Carleton University in Ottawa, Canada, describe the opportunities to use newly available digitized information to enhance decision making in the nonprofit sector, while highlighting the cultural shifts that are required to realize the full potential of these opportunities. Their article uses the Ajah online research tool as a case study to demonstrate how the systematic use of funding data, gathered from a multitude of online sources, can improve the effectiveness of nonprofit organizations.

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Chris McPhee and Stephen Huddart

Elisha Muskat, Executive Director of Ashoka Canada, and **Delyse Sylvester**, Director of Community at Ashoka Changemakers, describe how the Ashoka Changemakers.com online community creates a space for: investors to find and support multiple innovations; social innovators to find each other, work together, and source funds; and disruptive innovations to grow over time where disruptive change is needed. Their article provides examples of how an “Open Growth” approach supports the co-creation and evolution of innovative ideas and collaborative social entrepreneurship.

Seana Irvine, Evergreen’s Chief Operating Officer, provides a case study of Evergreen Brickworks, Canada’s first large-scale community environmental centre, which is also a venue for celebrating innovation in urban greening, with a focus on the role of ICT in enhancing communication, education, and action towards social change. Here, the transformation of a physical space, and the innovations subsequently layered upon it, provide a metaphor, a framework, and an organizational mindset for further social innovation by Evergreen, its partners, and the wider community across Canada.

Vickie Cammack, President and CEO, and **Kerry Byrne**, Director of Research, at Tyze Personal Networks, share experiences from their health and social venture, which uses technology to engage and inform individuals, their personal networks, and their care providers to co-create the best outcomes. They describe a shift from individual models of care to a network model of care, which recognizes that, to achieve the best outcomes, individuals require communication, problem solving, and collaboration amongst and between informal networks and formal care providers.

Jeesan Chowdhury, co-founder of Hacking Health, reports on his early experiences with a “hackathon” approach to stimulating innovative solutions to front-line healthcare problems. Hacking Health brings together healthcare professionals and software developers to quickly create working prototypes of new applications. This approach to social innovation and entrepreneurship using information technology holds promise for improving the quality and sustainability of healthcare.

In the last article, **Anil Patel**, Executive Director of Framework, describes the Platformation project, through which nonprofit organizations can identify sets

of cloud-computing tools that will work well together and will help them function more effectively by increasing collaboration, transparency, and efficiency within their own organizations and with other, like-minded organizations. Platformation is motivated by “the sharing imperative” – a movement or tendency towards sharing information online and in real time, which is an important mechanism for social innovation.

Since it is evident that the relationship between technology and society is co-evolutionary, we may discern the shape of things to come by looking at work being today. We hope that you enjoy this glimpse at technology-enabled social innovation’s promise and potential.

Stephen Huddart
Guest Editor

About the Editors

Chris McPhee is Editor-in-Chief of the Technology Innovation Management Review. Chris holds an MASc degree in Technology Innovation Management from Carleton University in Ottawa and BScH and MSc degrees in Biology from Queen’s University in Kingston. He has over 15 years of management, design, and content-development experience in Canada and Scotland, primarily in the science, health, and education sectors. As an advisor and editor, he helps entrepreneurs, executives, and researchers develop and express their ideas.

Stephen Huddart is the President and CEO of The J. W. McConnell Family Foundation in Montreal, where he has worked for the past nine years. The Foundation’s mission is to engage Canadians in building a society that is inclusive, sustainable and resilient. Stephen’s past endeavours include documentary filmmaking in Latin America, owning and operating a jazz cafe in Vancouver, and working as a humane educator with the British Columbia SPCA. He serves on the boards of ArtsSmarts, Philanthropic Foundations Canada, and the McGill Faculty of Religious Studies. He has a Masters Degree in Management from McGill University.

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Renewing the Future: Social Innovation Systems, Sector Shift, and Innoweave

Stephen Huddart

“ I think what connects the challenge for business, the challenge for government and the challenge for communities now, is both simple and difficult. We know our societies have to radically change. We know we can't go back to where we were before.

Geoff Mulgan
Chief Executive, NESTA

Against a backdrop of various “occupy” movements signifying civic dissatisfaction with the social contract, and in an era of fiscal restraint affecting governments and communities in many parts of the world, we need new and more effective ways to address complex social challenges. While continuous innovation is commonly understood to be a source of growth, productivity improvement, and competitive advantage in the technology and manufacturing sectors, the author's focus is on social innovation systems, designed to replace maladaptive institutions and obsolete policy frameworks with novel and disruptive means for improving outcomes on issues such as population health and climate change.

This article proposes a definition of such systems, and examines how system-level tools including impact investing, open data platforms, and “change labs” are fostering collaboration among the private, public, and community sectors. We argue that a key priority at this time is to make these and other tools and processes for social innovation available to community organizations and their government and business partners everywhere, in a manner that allows for continuous cycles of implementation and learning.

The author describes one such project currently being developed in Canada by Social Innovation Generation and other partners, called Innoweave. Innoweave is a technology-enabled social innovation system for sharing the tools and processes of social innovation with the community sector. The article concludes with a call for multi-sectoral participation in social innovation systems as an investment in society's adaptive capacity and future wellbeing.

Introduction

A recent European Community paper (BEPA, 2011; tinyurl.com/867tbem) defines social innovation as follows:

“Social innovations are innovations that are social in both their ends and their means. Specifically, we define social innovations as new ideas (products, services and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations. They are innovations that are not only good for society but also enhance society's capacity to act.”

The philanthropic and charitable sector often acts as society's “Research and Development Department”, testing new ideas at relatively low cost and enabling governments, communities, and the private sector to adopt those that deliver better outcomes. Typically, organizations proposing a social innovation – such as Roots of Empathy (rootsofempathy.org) or JUMP Math (jumpmath1.org) – operate on grant funding until able to prove that they offer a new and better solution to a social problem. While numerous breakthroughs can be cited, experience has taught the McConnell Family Foundation and its grantee partners that the political,

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economic, and social context within which a problem occurs is often invested in maintaining the status quo and thus resists change.

The introduction of systems language points to the importance of context. Frances Westley and Nino Antadze (2009; tinyurl.com/bmqddrh) write that social innovations “involve institutional and social system change, [...] contribute to overall social resilience, and demand a complex interaction between agency and intent and emergent opportunity.” A definition from the Social Innovation Generation’s “Social Innovation Primer” (sigeneration.ca/primer.html) is also helpful:

“Social innovation is an initiative, product or process or program that profoundly changes the basic routines, resource and authority flows or beliefs of any social system (e.g., individuals, organizations, neighbourhoods, communities, whole societies). The capacity of any society to create a steady flow of social innovations, particularly those which re-engage vulnerable populations, is an important contributor to overall social and ecological resilience.”

A *social innovation system* then, refers to institutional arrangements designed to produce that “steady flow of social innovations” mentioned in the previous paragraph, to address complex problems from multiple perspectives, using a range of means over time and at different levels of scale, so as to transform problems and their contexts into matrices for new understanding, new approaches, and potentially, the emergence of new systems.

New Business Models: Shared Value and Impact Investing

The need to increase private sector productivity in order to remain globally competitive and maintain living standards is well understood. Moreover, the day has passed when companies could focus on short-term profits while generating “externalities” in the form of pollution, ecosystem destruction, or social dislocation, for governments and future generations to clean up. As Michael Porter predicted over 20 years ago (Sustainable Prosperity, 2010; tinyurl.com/csocmgf), leading companies operate with enhanced consideration for environmental and social consequences. By “sharing values”, such companies advance environmental and social goals in collaboration with communities. They also share their capacity with community sector partners, through strategic alliances, direct funding, and in the form of technology and skills transfer.

The diverse firms comprising the EXCEL Partnership (delphi.ca/services/the_excel_partnership/), for example, share an interest in sustainability. They collaborate on strategy, work cross-sectorally, and invest in leading-edge research and community programs. In another example, 21 forest companies are re-engineering their operations to follow the advanced sustainability principles of the Forest Stewardship Council (fsc.org) through the Canadian Boreal Forest Agreement (canadianborealforestagreement.com). This is a system-level bet that transforming a market in the public interest will confer competitive advantage and improve long-term viability, for an industry and the communities where it operates. Notably, the agreement came about in response to challenges posed by conservation organizations and foundations who continue to co-invest in its implementation.

Companies also face a challenging social context – including an aging workforce, a burgeoning Aboriginal population, and increased flows of skilled immigrants. Those whose recruitment practices address such issues will attract and retain stronger workforces. To cite an example in the skilled immigrant area, the Toronto Region Immigrant Employment Council (TRIEC; triec.ca) and Assisting Local Leaders with Immigrant Employment Strategies (ALLIES; alliescanada.ca) programs integrate philanthropic and community capacity with private-sector leadership and government support to create shared resources for learning and improving practice around recruitment, mentoring, and peer support.

Social Capital Partners (SCP; socialcapitalpartners.ca) exemplifies another promising approach. SCP works with businesses, community agencies, and governments to create hiring programs for people facing barriers to employment. It provides low-interest financing to entrepreneurs willing to add a social dimension to their human resource policies and it is working with some of Canada’s largest employers to integrate advanced community hiring practices into their recruitment strategies.

Business leadership includes support for the emerging field of impact investing (Bugg-Levine and Emerson, 2011; tinyurl.com/c6ff4uf). The recently established Centre for Impact Investing (impactinvesting.marsdd.com) at MaRS is incubating new hybrid financial instruments for achieving social and environmental objectives, and with philanthropic and private sector support, will soon launch the SVX (thesvx.org), a platform for capitalizing social ventures.

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Building on the recommendations of the Canadian Task Force on Social Finance (socialfinance.ca/taskforce), private and public foundations are beginning to develop strategies for placing a portion of their endowments in impact investments. Quebec's Chantier de l'Economie Sociale (chantier.qc.ca) is a leader in this field and has a diverse portfolio of blended investments. Can it be long before universities, pension funds, and other institutions with large endowments begin to invest in a similar manner?

Vancity has partnered with the BC Government and the Vancouver Foundation to create Resilient Capital, a \$15 million dollar impact-investment fund. The Royal Bank of Canada (RBC; rbc.com) has announced a new \$20 million impact-investment fund (tinyurl.com/7qbkjyx) that is actively seeking investments in initiatives with clear environmental and social goals.

In comparison with the UK, where the government has launched Big Society Capital (bigsocietycapital.com), a bank with £600 million (approx. \$930 million US) to invest in social ventures, these are small steps, but as investors recognize that such investments can provide stable and attractive financial returns while advancing social and environmental goals, the market should expand quickly.

Social Innovation in the Public Sector

Governments caught in the downdrafts of fiscal restraint can find it necessary to simply offload employees and cut programs to stay afloat. However, when such measures are undertaken without regard for the larger systems within which we all must navigate, the effect can be to simply offload the problem onto another level of the system, usually a subsidiary one, at the bottom of which stand households and families, or to hand the problem to the future in the form of growing social and environmental deficits, as we currently do with Aboriginal youth and climate change.

Investments in social innovation allow systems and communities to adapt during times of austerity, as Geoff Mulgan (2012; tinyurl.com/77jn5dn) recently explained in Toronto. Just as the private sector has learned to innovate under the combined constraints of social, environmental, and competitive pressures, governments need new partners and operating models that support collaboration and innovation.

A climate of risk aversion is also limiting governments' capacity to innovate (Zussman, 2012; tinyurl.com/

7dlwxm2). As result, governments are shifting some of their work into the community and private sectors. The federal government, for example, is reportedly exploring a range of new impact-investing tools, such as social impact bonds (socialfinance.ca/social-impact-bonds), as a means of financing innovation in social service delivery.

Yet another approach is to drive policy and program innovation through "labs" that draw on the specialized knowledge of multiple stakeholders, including affected populations, to develop and prototype new solutions. Denmark's Mind Lab (mind-lab.dk/en) and Finland's Design Lab (helsinki.designlab.org) are two examples. Mindlab's Christian Bason, author of *Leading Public Sector Innovation* (2010; tinyurl.com/82r2nr8), revealed civil servants' untapped capacity to generate public service innovations during his recent talks in Canada (Bason, 2012; tinyurl.com/7eqeemw). Labs have a unique ability to reframe intractable problems, generate many potential approaches, winnow them down and rapidly test, adapt, and scale those with the highest potential for impact. Their premise is that, often, before we can succeed, we must fail several times. Rapid iteration helps sponsors to fail fast and safely, and it can generate superior outcomes, as Lisa Torjman's helpful blog post on the subject illustrates (Torjman, 2012; tinyurl.com/7zww9uy).

Another strategy is to release more government data to the public, on the premise that this generates transparency, ideas, and improved service standards. Montreal (tinyurl.com/7e6ndek) is the latest Canadian city to adopt this practice, joining Vancouver (tinyurl.com/873cpy9), Edmonton (data.edmonton.ca), Toronto (tinyurl.com/4rk9e4e), and Ottawa (tinyurl.com/2afd43z).

British Columbia is currently Canada's leading jurisdiction when it comes to public sector innovation. The BC Social Innovation Council (socialinnovationbc.ca) has produced several useful reports and the government is committed to implementing most of the Council's Action Plan. One example, BC Ideas (changemakers.com/BCIdeas), uses a crowdsourcing platform to identify ideas and programs that "offer innovative solutions to health, social and environmental challenges facing BC communities today, and in the future."

Social Innovation and the Community Sector

There are 85,000 registered charities in Canada, employing two million people in fields such as education, health care, social services, arts and culture, environment, housing, and international development

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(tinyurl.com/7glcx45). The sector's annual revenues of \$177 billion exceed those of the manufacturing and automotive sectors (Lasby, 2011; tinyurl.com/7syfm2m). Despite its size, the community sector does not have well-developed means for communicating its diversity and impact to itself, to Canadians, or their governments. Sub-sectors such as arts and culture and environmental organizations are often absent from sector councils, viewing themselves as worlds apart.

Charities are also finding that donors are demanding new levels of accountability and transparency, along with evidence of impact, rather than assurances of doing good. Absent agreed-upon standards for impact reporting however, it can be difficult for charities to assess or compare their performance.

Meanwhile, government's relationship with the sector has been coloured recently by maladroit actions that threaten to dampen free speech on matters of public interest (Globe and Mail, 2012; tinyurl.com/7twj2sc), as proposed new regulatory measures would require that charities report on all activities that can be construed as advocacy. Within the sector, reporting activities already constitute a significant drain on resources. A social services charity with an annual budget of less than \$3 million recounted to the author recently that it had to file 154 separate reports last year to funders – 66 of them to governments – requiring the work of two full-time staff and 10% of its budget.

At a summit convened last November by Imagine Canada (imaginecanada.ca), the umbrella organization for the sector, participants from across Canada agreed on five key strategies for improving sector performance:

1. Recognize and promote charities and nonprofits as a sector.
2. Work collaboratively at the national and local levels for greater impact.
3. Identify and engage the next generation of leaders.
4. Leverage the diversity and ubiquity of the sector in dealings with business and government.
5. Employ technology to heighten interaction and effectiveness.

The full report of the summit can be read here: tinyurl.com/6lo4wrf

Amidst so much uncertainty, and with the additional pressure of having to accomplish as much or more with fewer resources, many community organizations are reluctant to risk new ways of working. At the same time, this is the sector that constitutes much of our capacity to create better futures, and it is in need of additional capacity to do so.

Introducing Innoweave: Tools and Networks for Social Innovation

Innoweave is currently in development by The J.W. McConnell Family Foundation (mccconnellfoundation.ca) and its partners in Social Innovation Generation (SiG; sigeneration.ca). As a social innovation system, it will employ a web platform, in-person workshops, experts, and consultants – as well as a repository of knowledge and skills SiG has amassed over the past five years – organized and presented to increase capacity for innovation in and with the community sector.

Innoweave modules will provide content on the tools and processes for implementing social innovations, including the nature of social innovation; systems mapping; impact and strategy formulation; social enterprise, social finance and impact investing; developmental evaluation; cloud computing; knowledge and community mobilization; change labs; and other topics.

At the core of each module, an Innoweave workshop will help organizations learn more about a particular tool and assess its applicability to their work. Basic workshop curricula will be available at no charge on the web platform, so that core components can be used by anyone. The site will also point to professional facilitators and authors of particular tools.

Workshop components will include:

1. A workshop agenda and facilitator's guide
2. Presentation materials
3. Case studies
4. Short videos that provide insight and examples from global experts, practitioners, and early adopters
5. Activities and exercises for board/management teams
6. Follow-up exercises designed to help users master the material.

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While open access information and repeatable curriculum constitute an accessible starting point, many organizations will want to employ skilled facilitators and coaches to help them effectively implement new approaches. The web platform will provide information on scheduled in-person and web-based workshops, and it will list experts and consultants who can be called upon to provide assistance. Our goal is to also direct users to funding resources to which they can apply to support their use of professional consultants.

Peer learning and volunteer mentoring will also contribute to success. A community of practice linked to each module will facilitate exchange among organizations that are implementing a particular tool. Finally, the web platform will include links to other information hubs in Canada and around the world who share complementary goals. We envision co-producing or sharing modules with other such centres.

Progress to Date and Next Steps

A beta version of an Innoweave workshop, on cloud computing tools for community organizations (Platformation; platformation.ca), was organized in partnership with the Counselling Foundation of Canada (counselling.net) and Framework (frameworkorg.org) in November 2011. Over 90 people enrolled, and 16 of the organizations present have since launched cloud-computing projects aided by small grants from the Foundation. Each organization has a dedicated reporting page that it uses to share project milestones, expenses, and lessons learned with a community of other users. (The Foundation is reviewing another 40 applications submitted in connection with the project, and is not currently accepting more).

Discussions are underway with several prospective partners regarding a formal launch of Innoweave this fall.

Conclusion: An Invitation to Collaborate

Social innovation is coming of age. As sector boundaries shift and grow more porous, social innovation systems will enable us to collaborate more effectively and with greater impact, by putting complex problems at the centre of sustained efforts to transform them.

Recent advances in areas such as impact investing and technology-enabled platforms for scaling new ideas point to an approaching horizon where institutions and citizens can play a more active and informed role in shaping desirable and sustainable futures. The work will move forward more quickly when governments, companies, and civic organizations invest in active collaboration around solving complex social and environmental challenges.

In the rebalancing of sector responsibilities that occurs when governments downsize and companies work to advance blended value goals, we need to invest in the community sector's skills and professional capabilities around social innovation. Improving the sector's ability to adapt, to lead, and to participate in continuous social innovation will ultimately benefit us all.

Acknowledgements

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About the Author

Stephen Huddart is the President and CEO of The J. W. McConnell Family Foundation in Montreal, where he has worked for the past nine years. The Foundation's mission is to engage Canadians in building a society that is inclusive, sustainable and resilient. Stephen's past endeavours include documentary filmmaking in Latin America, owning and operating a jazz cafe in Vancouver, and working as a humane educator with the British Columbia SPCA. He serves on the boards of ArtsSmarts, Philanthropic Foundations Canada, and the McGill Faculty of Religious Studies. He has a Masters Degree in Management from McGill University.

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From Stories to Evidence: How Mining Data Can Promote Innovation in the Nonprofit Sector

Michael Lenczner and Susan Phillips

“*Endlich ist die große Ungewißheit aller Datis im Kriege eine eigentümliche Schwierigkeit, weil alles Handeln gewissermaßen in einem bloßen Dämmerlicht verrichtet wird, was noch dazu nicht selten wie eine Nebel- oder Mondscheinbeleuchtung den Dingen einen übertriebenen Umfang, ein groteskes Ansehen gibt.*”

(The great uncertainty of all data in war is a peculiar difficulty, because all action must, to a certain extent, be planned in a mere twilight, which in addition not infrequently – like the effect of a fog or moonlight – gives to things exaggerated dimensions and unnatural appearance.)

Carl von Clausewitz
Prussian General and Military Theorist (1780–1831)
in *Vom Kriege (On War)*

Being a director at a nonprofit organization often means making guesses instead of properly informed decisions. One source of the “information fog” is fragmented funding. Nonprofit organizations have multiple types of funders, most of whom are not their direct beneficiaries. Predicting funder behaviour is therefore more of an art than a science. Planning for the future, setting goals, and making decisions all suffer in the nonprofit sector because of a lack of timely and accurate information.

This article examines the opportunities to use newly available digitized information to address this information deficit. It shows how the rich, variegated and fast-changing landscape of information available online can be collected, combined, and repurposed in order to deliver it in actionable forms to decision makers across the nonprofit sector. This information can significantly improve planning decisions and enhance the effectiveness of the sector.

The article concludes that a cultural shift is required in order for the nonprofit sector to exploit the opportunities presented by digital information. Nonprofits and funders are enjoined to increase their numeracy and to find creative ways to use data as part of their evaluation, planning and decision making. Researchers need to be adventurous in their use of quantitative information and specifically should employ linked datasets in order to explore previously unanswerable research and policy questions. The producers of data need to collect and publish their information in ways that facilitate reuse. Finally, funders need to support a variety of projects that seek to exploit these new opportunities.

How Mining Data Can Promote Innovation in the Nonprofit Sector

Michael Lenczner and Susan Phillips

Introduction

Carl von Clausewitz, a Prussian general of the 19th century, coined the term “fog of war” (tinyurl.com/28qrg7q). The term refers to the difficulty a military commander faces when obliged to make a decision with information that is incomplete and not validated. We believe that it is not an exaggeration to say that this is the habitual situation faced by directors of nonprofit organizations, as well as by their funders, as they try to accomplish their missions in sustainable ways.

Being a director at a nonprofit organization (NPO) often means making guesses instead of properly informed decisions. One cause of the information fog is fragmented funding. NPOs are usually reliant on a multiplicity of funding sources, including government programs (at federal, provincial, and regional/municipal levels), donations from individuals, corporate sponsorships, and support from private and public foundations. The challenge of planning for the future is exacerbated by the difficulty of predicting the priorities and behaviour of funders, especially considering that government funding partners, frequently a significant source of revenue, always have a real chance of changing in the next election. The instability and competitiveness of financing means that an increased ability of a NPO to achieve its mission does not necessarily result in increased funding. This forces many NPO leaders to split their attention between the mission of the organization and its funding, which hampers good, integrated decision making.

A second factor is the need to identify not only potential competitors but likely collaborators. Given the magnitude of the social innovations that many NPOs are trying to achieve, they increasingly need to actively collaborate with a wide range of other organizations, funders, and governments. Obtaining enough information to sort out which organizations, among the myriad of possibilities, are likely to be effective partners is a significant challenge. This challenge is magnified by a multiplicity of stakeholders who may have competing views of the inherent value and means of achievement of the NPO’s mission, and all of whom expect to have current information on progress toward and impact of the mission (Tschirhart and Bielefeld, 2012; tinyurl.com/7wwdvkq). In an environment in which the legitimacy and activities of the charitable sector are being closely scrutinized – for efficiency, impact and political activity – the ability of NPOs to be more effective producers and consumers of quality information is paramount. The need to oper-

ate with better access and clarity of information applies equally to funders as they seek to deploy their limited resources in strategic ways with maximum benefit.

This article examines the opportunities to use newly available digitized information for more effective decision making in the nonprofit and charitable sector. It shows how the rich, variegated, and fast-changing landscape of information, often currently restricted to silos, can be collected, combined, and repurposed in order to present previously unavailable information to decision-makers across the sector, and thus greatly enhance the potential for social innovation.

Nonprofit Information Today

That good decisions and the ability to create solid plans for the future rely on good information is a central tenet of strategic management. Unfortunately, the types and sources of information available to Canadian NPOs are very limited. The main source of information gathered on and available to Canadian charities and public is the T3010 annual tax returns that are collected and published by the Canada Revenue Agency (CRA; cra-arc.gc.ca). This database is supplemented by a variety of specialized resources including the Canada Survey of Giving, Volunteering and Participating (CSGVP; tinyurl.com/6q4nopl), the Canadian Human Resource Council for the Nonprofit Sector (hrcouncil.ca), and websites of various umbrella organizations that represent different components of the sector. Although each of these is a useful resource for specific purposes, they are inadequate to address the challenges outlined above.

The information collected by the CRA illustrates some of the shortcomings of the existing data. Despite the scope of the CRA charity database, it was designed with internal CRA administrative and compliance purposes in mind, and so its application is limited. Although researchers can use this dataset to get a better high-level picture of the charitable sector (which only comprises half of the nonprofit sector), it is not particularly user friendly and does not help directors or funders in decision-making. Recent projects such as Place2Give (place2give.com), Open Charity (opencharity.ca), and Donate2Charity (donate2charities.ca) have undertaken to display this information with much better visualizations. In addition to better packaged T3010 data, Imagine Canada’s new portal, CharityFocus (charityfocus.ca), encourages NPOs to provide narratives that “tell their stories” about their activities and impacts. Still, the core tax dataset is restrictive in that it provides only broad

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descriptions of the human resources and financial activities of individual charities and can offer little insight into the networks, clients, collaborators, government partners, and funders of NPOs.

Beyond these traditional sources, there is a bewilderingly vast and diverse world of information about the sector that is becoming accessible. Everything from the annual general reports of rural volunteer centres to the public financial accounts of federal departments is a potential source of actionable intelligence. When any of the entities related to the nonprofit sector publishes its information online, that information becomes exploitable in new ways. For instance, many, if not most, funders now publish information online as to whom and what they fund. Their reports are mainly designed with print publication as the principal media, however, and the information comes in heterogeneous formats and layouts, at different time intervals, with different levels of detail, and is published under different licenses. There has been no effort to standardize these datasets – until the open data movement of the last few years.

The Possibilities of Digital Information

The impact of the Internet is due not only to the vast amount of information available and the speed at which it can be accessed, but also to the digital format of the information. Digital information possesses special qualities that enable machines to manipulate it easily in various ways. An example is that it is possible to download web documents in various formats (Adobe PDF, Microsoft Word, Text Format, etc.) and run a program that will return the number of words contained in each document. This task, which in the era of print publishing would require a person counting out every word, is now one that every high-school student takes for granted as being possible at the click of a button. The effect of these digital qualities is that information can be sliced, categorized, and linked to other pieces of data.

The digital qualities of data are exemplified and exploited by the open data movement (tinyurl.com/qdffwj). Open data is a new practice whereby governments publish their data online in formats and under licenses that encourage “repurposing.” These data cannot include information about individuals so as not to compromise individual privacy. The formats can easily be treated by machines (think of Excel sheets as opposed to PDF reports). Both the datasets that have been “opened” by government as well as the rest of their online informa-

tion can be publicly – and for the most part, legally – accessed in ways not controlled by their creators. They are now being combined or “mashed up,” and put to creative uses by social innovators with possibilities that are just beginning to be imagined (see Davies and Bawa, 2012; tinyurl.com/73t3nww; Sonvilla-Weiss, 2010; tinyurl.com/72e8f4f). Open data policies are not transformative on their own (Cole, 2012; tinyurl.com/7tuss52), but they point the way towards increased application of public information.

Many of the early experiments with aggregated government data were focused on local governments, often led by community activists with encouragement by municipal governments. These attempts aimed to promote citizen participation and community empowerment. Early projects include websites that combine and map crime and census data allowing people to compare neighbourhoods by a range of safety and socio-economic indicators. As a wider range of datasets are made available, a second generation of applications is starting to emerge beyond basic mapping. These applications use multiple sources of data and have a potential to offer more in-depth analysis of more complicated issues (Bhushan, 2012; tinyurl.com/7jus3ax).

It is now possible for “data entrepreneurs” to: i) find diverse online data, including non-government sources; ii) gather these data regardless of the initial intent of the publishers; and iii) combine, process, and apply them in legal ways never imagined by the publishers. A new Montreal-based company, Ajah, is at the leading edge of this emerging practice of data aggregation and repurposing for civil society, and serves as a good case study of the potential of open, combined data for nonprofits.

Ajah: Putting the Data to Work

Ajah (ajah.ca), which was founded in 2010 by one of the authors, Michael Lenczner (CEO), focuses on collecting information that is published online and transforming this information into useful services for Canadian NPOs. Ajah’s primary service is an online research tool that helps NPOs identify possible funders, evaluate them, and determine how best to approach them. In order to successfully approach funders, NPOs need to acquire information about public and private foundations, government funding programs, as well as publicly and privately owned corporations. Ajah employs some of the online sources of information published by and about each of these types of entities.

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Ajah uses the T3010 CRA tax files of Canada's 86,000 charities to extract detailed information about foundations and identify their funding recipients. The company collects information about federal and provincial funding through various sources, including the federal proactive disclosure reports and provincial reports and databases (e.g., the Alberta Lottery Fund, Ontario's Trillium Foundation, British Columbia's Government Gaming Report). Corporate donations are tracked through the automatic collection and parsing of annual general reports of charities, as well as through manual research.

The digital publication of information means that, for the most part, it does not need to be acquired and processed manually. Rather, it is possible to write scripts that fetch the files, extract information that these scripts have been told to expect in certain places (e.g., dates, organization names, partial or full addresses, grant amounts), and store the information in a database. In the same way that digital text files made counting words much easier by orders of magnitude, the "scraping" of these digital reports and storing them into a database allows for quick and powerful analysis. Mapping grant recipients and identifying patterns and trends become trivial tasks.

If there is additional funding information, such as the type (e.g., operational, capital costs), purpose (e.g., arts, culture, sports, environment), or duration (single year versus multi-year), it is possible to perform further analysis. It is also possible to overlay this information against an external data set, such as Statistics Canada demographic data or political ridings. This would make it possible to explore the relationships between funding and socio-economic indicators or the possibilities of political patronage, for instance.

However, the real potential lies in combining solitary sources of information and cross-referencing them. Information from multiple sources can be connected to a specific funder or NPO. Suddenly, it is possible to see a much more complete picture of an NPO when its T3010 return is linked to the information about its program descriptions and the grants it has received. Such information can be found in foundation, corporate, and government records, and scraped for content. Furthermore, it becomes possible to detect correlations between changes in the funding behaviour of a specific funder and changes in recipient charities by examining their economic profiles. The impact of funding cuts by a group of funders (e.g., federal funders) can be examined and contrasted with the corresponding beha-

viour of another group of funders (e.g., provincial funders or foundations). In time, it should even become possible to model the effects of different funding policies or economic events.

Because computer programs can be set to run automatically, a scraping program can be set to check every day for a new copy of a report or form. When new information is published it is automatically downloaded, compared against its previous version, and added to the database. This whole process occurs without any human intervention; intervention is only required when funders publish incorrect or insufficient information that a machine cannot properly categorize.

As a result of this process, an extraordinary database – the largest of its type in Canada – has been compiled on the nonprofit sector and it is automatically updated and properly cross-referenced with minimal human intervention. This database can be used to answer a wide variety of specific questions, or to create and power specific tools, such as Ajah's funder research service.

Opportunities for the Nonprofit Sector

Besides its usefulness to NPOs, this new world of data also creates opportunities for funders, policymakers, and researchers, presenting important opportunities for all to improve analysis, planning, and decision making.

In the case of charities, the clearest opportunity is to use this information to benefit resource planning, specifically the search for diversified, stable funding. There is a wealth of unexamined information about most charities' primary funding partners. If properly analyzed, it could give them the ability to identify new funders, better predict their behaviour, and make more robust resource plans. This information can also be used by directors to decide what programming to develop and at what scale, enabling them to avoid the mission drift that can occur from chasing the most obvious funding opportunities.

Although there is less information on social impact, there are significant opportunities for NPOs to improve their program evaluation and reporting of outcomes. Both funders and the broader public are looking for evidence that resources allocated to the nonprofit sector are having the desired impact, and they are actively seeking out such evidence. To respond to this demand, NPOs are trying to find new ways to tell their stories.

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NPOs seeking to position themselves well could combine their qualitative stories with effective use of quantitative data – both their own and what is publicly available – to provide more complete and satisfying accounts.

By using digital data, funders have opportunities to improve their analysis and their decision making. Connected datasets allow funders to address a wide range of questions: the impact of their grants, how they fit into the funding landscape of a locale, or how best to leverage other funders. With a clearer picture of the revenues and financing mixes of its recipients, funders are empowered to make better decisions. Easily accessible data on who is funding what in a city or region might provide the impetus to advance the formation of regional networks and collaboration among funders that has been talked about for the last decade or so.

Equally significant opportunities exist for researchers and policymakers. In terms of scholarly research on the nonprofit sector, Canada lags behind the United Kingdom and particularly the United States where there is a cottage industry in analyses of the 990 form, which is the American equivalent of the T3010. With few exceptions, Canadian researchers are just beginning to use T3010 data, and the advent of digital data represents a leap forward. It presents opportunities for research that is informed by and can address real-world challenges, and that can be injected into policy and organizational decision-making in a timely manner.

Consider Ajah's recent research that addressed the question of how extensively Canadian charities use social media. Using conventional methods, researchers would have devised a phone or web survey, drawn a sample of a few hundred or even a few thousand charities, hoped for an adequate response rate of perhaps 30 percent, and analyzed the data with a small horde of research assistants, over the span of a several months. Instead, in partnership with the marketing agency Stephen Thomas, Ajah simply wrote a program that checked the websites of 22,000 charities in two days and identified their Twitter, Facebook, and other social media accounts. These data were then linked to the charities' T3010 financial information in order to permit the incorporation of an economic dimension into the analysis. The linked data will be made available to researchers and will be the subject of both academic papers and resources for community organizations later this year. A future version of this report could easily include the content of those social media accounts and allow for detailed content analysis.

What is Required

While the opportunities noted here would not require tremendous resources, it is unlikely that the stakeholders in the nonprofit sector will fully pursue them. Too few of them have either the awareness or the capacity to use quantitative data. In order for these opportunities to be realized, a moderate but real shift in culture is required.

On the whole, NPOs lack a capacity for numeracy. Also, many will protest that quantitative approaches have severe limitations. Bearing in mind the real limitations of the available quantitative data, there are still demonstrable advantages to employing such data. This is why Carleton University's new Masters in Philanthropy and Nonprofit Leadership (carleton.ca/sppa), to begin in spring 2013, includes a component on quantitative as well as qualitative research. This new Masters is the first program of its kind in Canada and it is intended to help nonprofit leaders be more strategic and innovative, which includes being good users of available research.

Funders also need to begin to employ better evidence in their decision making. They should model the impact of their decisions on the financial viability of recipients and the funders' networks, and use this to inform their decisions. Being better informed will permit funders to minimize the risks associated with more "creative," impact-oriented grantmaking (Anheier and Leat, 2006; tinyurl.com/cbq77r7) such as making larger grants to promote transformative and durable social innovation. Yet, many funders collect data only for accountability purposes, rather than learning, and, like NPOs, lack the skills and capacity to make good use of it (Hall et al., 2003; tinyurl.com/blsvppk). They, too, must take the requisite step of developing the capacity of being both good consumers and producers of data, and they need to use it strategically to improve their effectiveness.

Canadian researchers have not been particularly adventurous in developing large-scale, empirical analyses of the nonprofit sector. Researchers need to move aggressively towards employing quantitative data and be creative in finding data sources that contain information relevant to their topics. Linking disparate datasets – such as the matching of social media information with T3010 returns – allows researchers to analyze more complex problems. In addition, granting councils, foundations, and other interested parties have not supported or encouraged such research for any sustained period. Universities could be much more active collab-

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orators with the sector in producing and using quality evidence and in providing training in the relevant skills. Internships that would allow graduate students to spend time working in NPOs could be specifically directed towards enhancing capacities for data gathering and analysis. “Executive-in-residence” opportunities could be hosted by universities for senior staff of NPOs or policy-makers to enable them to develop more creative uses of data for both organizational and policy making.

Finally, the producers of data about the nonprofit sector need to collect and publish their data in ways that facilitate reuse. These producers include governments at all levels, foundations, corporate donors, and NPOs themselves. Data collection and publication could be improved: errors in the data reduced and data published in easier-to-use formats, in non-aggregated or non-summary form, with explicit permission for reuse. For example, the International Aid Transparency Initiative (aidtransparency.net) is “a voluntary, multi-stakeholder initiative” that encourages international aid donors to publish their funding information in an agreed-upon format. Data producers should even go beyond facilitating access to encouraging re-use. For example, the New Zealand Charity Commission provides a public interface to query their database as well as sponsors a competition to make the best “mashups” or reuses of their data (tinyurl.com/bodkp8s).

There also needs to be an ongoing dialogue between data users and producers in order to identify areas where new datasets or modifications of existing datasets are required. An example of this type of collaboration is the newly formed T3010 User Group, which is composed of NPOs, academic researchers, and vendors to the nonprofit sector. Improvements in collection and publication should be encouraged in a similar manner to the Voluntary Sector Reporting Awards (tinyurl.com/65ljdeg) provided by the Queen’s Centre for Governance to recognize excellence in transparency and good governance.

Conclusion

The technique of identifying, collecting, and connecting datasets relevant to the nonprofit sector, as employed by Ajah, cannot completely dispel the “fog” in which nonprofits and their partners operate. Measuring social impact is a complex challenge that will not be resolved in the near future. But, systematic use of funding data can provide the necessary information to illu-

minate the objectives and patterns of funders, thereby allowing charities to reduce the energy and guesswork of fundraising, and to more effectively plan their programs. If we are able to take advantage of the opportunities presented by this financing and other digital information, we can expect improved planning by NPOs, more informed decision-making by funders, and researchers and analysts furthering our knowledge of the sector. At least some patches of fog may be lifted.

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About the Authors

Michael Lenczner is a Montreal-based entrepreneur who works in both the for-profit and nonprofit sectors. He has worked on community technologies since 2000, community data since 2003, and on open government data since 2005. He co-founded Ile Sans Fil, CivicAccess.ca, Montréal Ouvert, serves on the board of several nonprofits, and is a frequent partner in academic-community collaborations. He is the CEO and founder of Ajah, a company that builds online tools for the Canadian nonprofit sector.

Susan Phillips is Professor and Director of the School of Public Policy and Administration at Carleton University in Ottawa, Canada, where she has led the creation of Canada’s first Masters in Philanthropy and Nonprofit Leadership. Internationally recognized for her research in this field, Susan is currently co-editing the Routledge Companion to Philanthropy, the first international handbook in philanthropy, and she is beginning a major SSHRC-funded comparative study of community foundations. She is a frequent advisor to nonprofits, foundations, and governments.

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Being Disruptive: How Open Growth is Delivering Effective Social Change at a Fast Pace

Elisha Muskat and Delyse Sylvester

“Every successful organization has to make the transition from a world defined primarily by repetition to one primarily defined by change. [...] We must migrate rapidly to becoming a global “team of teams” that comes together in whatever combination necessary to add the greatest value. [This] would be almost impossible without the web and its associated communications tools. Three people in the remotest corner of the world can decide to bring change to their community, have access to all the ideas and tools available in the world, and contribute to experimentation and successful change making. Ashoka’s Changemakers pioneered open-source problem solving for the many interests involved in change making.”

Bill Drayton

Founder of Ashoka: Innovators for the Public

Both innovators and funders need tools that map the entire constellation of solutions in a sector. Innovators, often labeled and isolated as system disruptors, need to be linked with their global peers offering and seeking each others proven strategies to accelerate positive change. The impact investing space needs a simple, open, and transparent way to find, convene, support, and track the progress of innovators.

This article describes how the Ashoka Changemakers.com online community creates a space for: investors to find and support multiple innovations; social innovators to find each other, work together, and source funds; and disruptive innovations to grow over time where disruptive change is needed, fast. Crowd-sourcing, transparency, and open growth are keys to accelerating large-scale change and creating a world of changemakers.

Introduction

Social entrepreneurs and innovators are creating and implementing disruptive solutions that are leading to much-needed, lasting social change. Doing so takes time and focus – which can result in a very nose-to-the-ground approach. Coming up for air to seek out opportunities for collaboration and new types of support is crucial to scaling the impact of one’s work, but can often be low down on a long list of priorities. Online social platforms can help social innovators achieve scale, but only if they are usable and accessible.

At the same time, many investors and funders are busy implementing their processes for selecting the projects

they will support in a given cycle. These processes help create rigour, fairness, and consistency. But they only work to find those projects that best meet existing criteria, leaving many amazing projects in the “no” or “not now” pile. Investors, like innovators, stand to benefit from more reflective and collaborative processes, and the same online social platforms can help them find new solutions and trends.

Ashoka’s Changemakers.com has, for the last 14 years, been serving as that accessible platform to address these issues: open-sourcing solutions to thematic challenges, creating opportunity for collaboration, and trend-spotting. (See changemakers.com/timeline for a more detailed history of Ashoka’s Changemakers.) In its new-

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est iteration, Changemakers.com is creating a marketplace that will also address the question of what to do with the projects “left in the pile”. It is allowing investors to go beyond their “top 5” by creating growth funds that can be invested in “change-shops” within the larger marketplace.

Collaborative Entrepreneurship

The rapid pace of change and increasing pressures on our climate, economy, political institutions, and global resources are disruptions with potent negative consequences. They demand equally potent positive disruptions – and fast. Individual social entrepreneurs are an unstoppable force of social change, but that force multiplies when social entrepreneurs come together to solve problems collectively. Collaborative entrepreneurship better leverages the value of local resources and global networks to more effectively scale social innovations.

It is surprisingly difficult for social entrepreneurs and investors to embrace new technologies for social impact. Exploring the countless web-based social change platforms remains a third-tier priority for social entrepreneurs because most are busy keeping the lights on; they are on the ground, face-to-face with the people whose lives they hope to change, staring challenges such as poverty and homelessness square in the eye.

Similarly, using web-based social change platforms is not a priority for most investors because their established granting systems get the job done – traditional grant applications, which require a large amount of time to prepare and submit, continue to stack high on funders' desks. But those same funders, faced with limited grant quotas and staff pressed to capacity just cannot get to all the promising ideas left in the pile.

To respond to this need, Ashoka Changemakers has created an online community that allows any user to pitch their ideas for social change. The best solutions, which range from idea-phase innovations to those with proven system-changing potential, receive unrestricted funding to scale-up their programs. The application process is relatively simple: users fill out an online application (in English, French, Spanish, or Portuguese – with an ever-expanding list of languages), explaining what they do, how it is new, what the impact is, and how it is sustainable. These project plans are submitted to live competitions hosted by sponsors. The innovat-

ors get the chance to interact and collaborate (with each other and the larger community) and all-the-while, the Changemakers team is in the background identifying trends and patterns to highlight to investors.

When innovators come together, there is instant recognition that they are a collective force for change. Rather than funders making vertical decisions for individual projects or programs, funders could be working across sectors. As Marilyn Struthers, program manager for the Ontario Trillium Foundation, stated: “Seeing funders as part of a funding economy can help us to make a strategic shift from looking down [into specific projects] to looking across the landscape for collaborative opportunity [for more systemic shifts].”

From Open Source to Open Growth

The Changemakers model of open-sourcing innovation has been an incredibly powerful tool for bringing together some of the best global ideas on a particular theme. This model embraces the principles of transparency and collaboration to create an online environment that supports the co-creation and evolution of innovative ideas; innovators can freely and openly share what they are doing and comment on what others are doing to co-create solutions to an identified global challenge. However, it was also leaving some ideas in the untouched pile, and falling short in providing ongoing support for emerging collaborative innovations. So, in 2012, Changemakers launched its newest iteration based on “Open Growth” (still in beta).

Open Growth extends the open-sourcing concept beyond identifying innovation, into growing innovations. Rather than simply posting an idea or project online, social innovators can share their plans for growth and scale, identifying key milestones and tracking their achievements in real time. Each innovation serves as a shop – more specifically, a change shop – in a marketplace of innovations. Investors can stroll through the marketplace, supporting as many change shops as they please.

Through change shops, social entrepreneurs are transparently defining and reporting on the progress they have achieved with their projects, from the first spark of inspiration to action. Simultaneously, funders can track the progress of innovations they invest in, and they can clearly measure the effectiveness of their efforts. Already, more than 800 idealists, innovators, entrepren-

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eurs, and organizations have set up shop on Changemakers.com – and 35 new change shops are being launched each week.

Through Open Growth, Ashoka's Changemakers is creating transparency and dynamic interaction between stakeholders – social entrepreneurs and investors alike.

Open Growth Example 1: Collaborating in First Nations Communities

Wapikoni Mobile (wapikoni.tv) is a social enterprise based in Montreal that has created a change shop. Wapikoni is not a typical brick-and-mortar venture. It is a traveling studio, created by filmmaker and Ashoka Fellow Manon Barbeau in 2004, that operates out of an RV and trains youngsters from First Nations communities in audiovisual and music creation. It encourages expression through art – an important medium for a culture that relies on oral tradition for storytelling.

Many youth growing up in First Nations communities do not have it easy. They face elevated school drop-out rates, alcoholism, isolation, and their suicide rate is twice the national average (tinyurl.com/6m2srwc). Wapikoni fills a tremendous need for a too-often marginalized population by providing at-risk youth the opportunity to be mentored by professional filmmakers and community organizers.

Since its inception, the mobile studio has reached more than 2,000 young people from seven First Nations, in 19 communities. These once-marginalized youngsters have produced 450 short films, 350 musical compositions, and have taken home 50 awards from film festivals in Canada and abroad.

The latest gadgets can surely help Wapikoni improve the quality of its services – high definition video cameras and recording studio apps are more affordable than ever – but it is the intersection between new tech and supportive online spaces, an open-sourced approach, that will help social entrepreneurs like Barbeau grow to the next level of change.

The pursuit of new feedback and funding models drew Barbeau to the Changemakers online community. Ashoka Canada had partnered with a large group of philanthropic and citizen-sector organizations to run a Changemakers competition to surface solutions for improving the learning environment of First Nations, Métis, and Inuit Peoples in Canada.

Barbeau submitted an entry to the “Inspiring Approaches to First Nation, Métis and Inuit Learning” initiative. Barbeau and Wapikoni were identified by the Changemakers community from a pool of nearly 300 entries for a pair of growth prizes, including a \$2,500 award from the Donner Canadian Foundation.

But what Barbeau never anticipated when she submitted her entry was the establishment of a long-term partnership with another Canadian social venture, Aboriginal Student Links (aboriginalstudentlinks.ca), a winner of the “Inspiring Approaches” Martin Aboriginal Education Initiative Award. Barbeau met Doug Dokis in a 90-minute Google+ Hangout (tinyurl.com/7hd7t3l) hosted by Ashoka Changemakers as a part of the Open Growth strategy; the Hangout provided entrants with a fun, open, and collaborative online space to meet other innovators and think through barriers to development with a social change lens.

Doug Dokis manages community services and outreach for Aboriginal Student Links, a venture that creates leadership capacity among students of all ages through a chain of long-term mentorship opportunities, from one class of participants to the next. In an interview, Dokis described the pressures of working as a social innovator, and the opportunities that the open-source approach opened up for him. “There is so much going on in the day-to-day that, typically, you only look in the places and toward the people you're familiar with. We're isolated in our areas of work. Without the online community on the site, I would never have heard of many of the programs that were involved in the initiative. It created opportunities to share ideas, form relationships, build partnerships, and even improve our programming.”

Barbeau and Dokis, despite not knowing each other beforehand, quickly realized that the missions behind their ventures were not isolated at all, but rather aligned quite closely – thanks to convenient and affordable technology, in this case a live video conference. The two jumped at the chance to work together to improve the lives of youth in Canada.

Together, Wapikoni and Aboriginal Student Links are documenting student development and empowering the next generation of First Nations leaders. Perhaps more important, however, Open Growth also gave Wapikoni Mobile and Aboriginal Student Links access to funding opportunities that are not readily available for social entrepreneurs in Canada.

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“The impact our programs have on the kids is incredible,” Dokis said. “It’s amazing to watch: if you provide youth with one meaningful adult in their life, they can change theirs. Our students are seeing that first hand.

“But in today’s funding landscape, it’s becoming more and more difficult to sustain programs. We’re very dependent on provincial funding and, to a lesser degree, federal funding, so I was happy to see that there was a significant corporate and philanthropic involvement with the Inspiring Approaches initiative.”

Addressing the Challenges of Old Processes

It is partly due to Open Growth, the public-facing on-line space, that emerging and established social entrepreneurs are able to better connect with each other, and to new capital, and to more effectively solve social problems. The more transparent innovators will have the greatest success in attracting funding and partnerships. The most engaged and adventurous investors will be most successful in leading the field in funding system change and impact.

No longer must funders decide to support one idea, while passing over other worthy solutions – a frequent funding conundrum that further silos agents of change. Now, opportunities for funders can shift from the embrace of proven solutions into venture capital investment in cutting edge ideas with potential for system change over five to ten years.

Successful Open Growth partnerships will compel other innovators to follow suit and will drive shifts in policy – or simply preempt them altogether. Already Open Growth has demonstrated its enormous potential to tap into and spread the innovations that have impact on their own, but are gamechanging if championed on an even greater scale.

Open Growth Example 2: Positive Disruptions in Business in Developing Countries

In 2010, the G20 asked Ashoka to use Changemakers to open-source solutions from around the world (tinyurl.com/76hsjum). They were looking for the best initiatives that had the capacity to unlock financing for small and medium-size enterprises (SMEs) in developing countries that are traditionally shut out of commercial lending and investments, despite their significant role in fueling economic growth.

Of hundreds of entries from around the world vying for G20 investment that will permit them to scale-up, 12 were chosen to take the stage at the G20 Summit and stand alongside U.S. President Barack Obama, Korean President Lee Myung-bak, and Canadian Prime Minister Stephen Harper.

Together, with involvement from the Inter-American Development Bank (IDB), these global leaders launched an SME Finance Innovation Fund and committed a total of US \$528 million to support the fund (tinyurl.com/7cdnua2). Open Growth will play a key role in further developing this innovative approach at the G20 Summit in Mexico, and it will attract little-known disruptive innovations that will continue to usher in new ways of doing business.

These previously unheralded, independent, grassroots solutions are unconnected to top-down policy and are not burdened by government restrictions or bureaucracy. Through the open process, they became the leading edge of the G20’s approach to addressing this major economic problem that had been hindering a global economic recovery.

One of the winners, Building Markets (buildingmarkets.org; formerly Peace Dividend Trust) was instantly put on the world stage, given a sizable investment, found partnerships and opportunities to scale rapidly, and became a global force for growing sustainable SMEs in conflict-ridden and post-conflict countries that were previously relying on economy-stunting foreign aid and external contractors. In addition to this, Building Markets founder, Scott Gilmore, was then identified as a leading social entrepreneur and has since been elected as a Senior Ashoka Fellow in Canada, recognizing the impact he has made on a continental scale.

Conclusion

The world is teeming with social innovations that have the potential to rebuild systems that define the way we live. Innovators who will have the greatest impact are passionate and focused, but also pause to identify opportunities for collaboration and strategic partnerships. Ashoka’s Changemakers platform provides a place where innovators can easily share their ideas in an open marketplace and track their progress towards achieving change. As innovators share their ideas, their work, and their progress, investors can see this in real time, helping to inform decisions about how to invest capital or granting dollars.

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Our times are marked by dizzying and sometimes frightening change. Entrepreneurs and investors demand the fast, effective, and collaborative action that Open Growth has the potential to deliver.

Ashoka envisions a world where everyone is a change-maker; a world where every individual – whether an SME accelerator presenting on stage at the G20, or a young documentarian in Quebec – has the skills, tools, and societal support to create positive change around them. Ashoka has built Changemakers to help create that enabling environment, and each new iteration provides better skills, tools and support to create a world of changemakers.

Recommended Reading

- Scaling Social Impact by Giving Away Value
tinyurl.com/83rpqqe
- Just How Powerful Are You?
tinyurl.com/cee72yk
- The Challenges of Measuring Social Impact
tinyurl.com/78yrgu8

About the Authors

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Evergreen Brick Works: An Innovation and Sustainability Case Study

Seana Irvine

“*We can rethink and rebuild many ... sectors of society on a profoundly new, open, networked model. Indeed, for the first time in history, people everywhere can participate fully in achieving this new future.*”

Don Tapscott
Author, Speaker, and Advisor
on Media, Technology, and Innovation

Technology is rapidly being deployed to advance social innovation that creates lasting change. This case study of Evergreen Brick Works explores how Evergreen is leveraging the power of its unique new campus as a showcase for advancing sustainability-related behavioural change along with new and emerging state-of-the-art technologies to advance its mission. The ultimate success of these technologies will be in their ability to engage larger numbers and greater diversity among participants, and in their ability to translate new insights into on-the-ground change in their communities. The article also identifies that the need for an organizational network mindset is as important as the technologies to achieve these changes.

Introduction

Evergreen (evergreen.ca) was founded in 1990 with a mission to inspire action to green cities. When I first started working at Evergreen 15 years ago, we had one Internet connection. Wires and cables ran out the windows to connect floors and you had to call out, “Anybody online?” before trying to go online yourself, lest you boot somebody off – which happened often.

Times have changed. Technology has changed every aspect of our world, shrinking the distance between borders, the ways that we work and, perhaps most significantly, how we communicate with one another. As Evergreen’s Chief Operating Officer, I have witnessed first hand how Evergreen has been swept along with these rapid advances in technology and our experience, in many ways, mirrors these broader trends. Information and communication technology (ICT) has changed how we organize ourselves to do our work and the myriad ways we connect with a diverse and growing network of stakeholders across the country involved in the urban sustainability movement.

This article explores how ICT is helping Evergreen mature from a fledgling grassroots organization to among Canada’s largest environmental not-for-profit organizations, and the ways that information technology at Evergreen Brick Works (ebw.evergreen.ca) – our flagship site – is helping enhance communication, education and action towards social change and the creation of greener, more resilient cities.

About Evergreen

Over 80% of Canadians and half of the world’s seven billion people live in urban centres (Statistics Canada, 2007; tinyurl.com/7bh64jy). While cities are social and economic hubs and generators of innovation and creativity, they also consume a disproportionate share of the world’s natural resources, and their design disconnects their inhabitants from nature. It is clear that the planet’s climate is actually changing as a direct result of human activity – much of it linked to urbanization – and this fact is creating unprecedented and dangerous risks. On a global scale, the earth’s air and water are increasingly contaminated, more people are living in urban

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poverty than ever before, and patterns of urbanization are accelerating the wholesale destruction of essential natural areas and agricultural land – and with that, the loss of vital habitat and biodiversity.

At the core of Evergreen's work is the belief that involving people directly in the process of restoring the natural health of their communities positively affects the attitudes and behaviours that lie at the core of the sustainable city. We believe that pressing urban environmental issues can be solved by bringing diverse groups of people together, inspiring them with possibilities and, identifying solutions, and taking action. This approach has helped us engage over one million Canadians from all walks of life in the active transformation of thousands of derelict asphalt and turf grass public parks and school grounds into vibrant natural areas and dynamic, healthy community spaces.

Evergreen Brick Works

For over 100 years, the Don Valley Brick Works manufactured bricks that built landmark buildings across Canada and that helped shape the skyline of Toronto. Nestled among Toronto's ravine network, the factory produced over 43 million bricks a year at its peak. When it closed down in the late 1980s, all that was left of the Don Valley Brick Works was 42 acres of damaged ecosystem, 14 crumbling industrial heritage buildings, and a lot of contaminated soil.

In 2002, Evergreen began its revitalization of the Brick Works. Eight years later, Evergreen officially opened "Evergreen Brick Works" as Canada's first large-scale community environmental centre and a venue for celebrating innovation in urban greening. Evergreen Brick Works is a vibrant public space where visitors can engage in a broad suite of hands-on environmental programs and it is a place to demonstrate and share best practices for restoring the environment, creating healthier communities, and strengthening the emerging green economy. To transform the site, Evergreen embedded the values of collaboration, environmental sustainability, economic viability, and change and adaptation into our design process.

Collaboration

From the outset, the intent was to create a dynamic and interactive space where environmental issues were not marginalized as a discreet set of considerations, but rather, to create a physical space and visitor experience

that explores and showcases how nature is central to all aspects of urban life. This holistic approach requires multiple collaborations with complementary organizations, including community service, environmental, arts and youth organizations, social innovators, all levels of government, academia, and environmental innovators. We consulted widely with partner organizations, site stakeholders, and the community-at-large as we undertook the planning and design.

Given the complexities of redeveloping the site (brown-field, heritage designated, and located in a floodplain, among other realities), our green design ambitions, and a tight budget, problem solving was a daily occurrence. Evergreen worked hard to facilitate solutions among multiple partners and stakeholder audiences while not losing sight of the vision.

Environmental design and sustainability

To demonstrate leadership and serve as an international showcase for green design and urban innovation, Evergreen Brick Works has been redeveloped to the highest standards of green design, including a LEED platinum building (tinyurl.com/2xqdgdy), and extensive resource conservation features employed throughout.

Social enterprise

Evergreen Brick Works also functions as a social enterprise, with revenue generated through property management, third-party events, parking, and our garden centre covering 100 percent of operating costs. This objective is central to the long-term financial viability of the site. It also gives Evergreen access to new audiences and new engagement strategies, and thus opportunities to have a greater impact.

Change and adaptation

The campus-like nature of Evergreen Brick Works, its physical and economic relationship to the city, and the deep social and cultural connections many had to it, made its redevelopment a microcosm of city planning. The recognition that the site itself had evolved constantly over time in response to changing environmental, economic, and social conditions, was central to our approach. Spaces were designed with a light touch for maximum flexibility and multi-purposing.

Walking the Talk

A commitment to environmental best practices, to creativity and innovation, to deep collaboration, and the recognition that change and evolution are constants in

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complex environments, now informs our approach to programming and the visitor experience. And, it is this same approach and set of values that we are now using as we begin to advance the implementation of new ICT tools and systems. These ICT tools are enabling participants to contribute their ideas and feedback in real time both onsite and remotely. With an eye to continuing to advance the highest standards in green design and environmental sustainability, ICT will support operational efficiencies that conserve natural (and thus financial) resources while allowing for transparency in how the site is performing. And, most critically to Evergreen's mission, ICT tools are helping Evergreen share ideas and innovations from among an increasingly diverse and growing network of collaborators, helping us connect and inspire others involved in advancing social change through greening our urban environments.

In 2011, our ICT ambitions took a great leap forward with a generous in-kind investment in our IT capabilities from Cisco Canada (cisco.com). The following presents a summary of some of the key information and communication technologies that Evergreen is pursuing as intentional strategies for inspiring social change, from high-tech solutions such as integrated building control systems, to user driven and comparatively low-tech solutions, such as uploading images to websites. Further examples include:

- digital signage supporting programming, way-finding, and displaying building performance
- online and hand-held tools for education, interpretation, and civic engagement
- enhanced connectivity, such as video conferencing and site-wide wireless
- increased security of IT systems and data
- sophisticated analytic, diagnostic, and management tools to help Evergreen maintain growing IT needs with a small and efficient IT team

Operating a green campus: Resource conservation and operating efficiency

A digital lighting control system with daylight and occupancy sensors reduces unnecessary lighting by automatically adjusting brightness in hundreds of indoor and outdoor fixtures. This system allows for 57% energy savings compared to standard construction. Integrated

building control systems help conserve energy associated with operating the Evergreen Brick Works campus. We are working with Cisco Canada (cisco.com) and Fifth Light Technology (fifthlight.com) to install a combination of centralized and distributed sensors and controls for monitoring and managing energy use. Through one digital interface, the building manager can control energy use, both on-site or remotely, for lighting, fans, heating and ventilation, and mechanical systems.

Promoting civic engagement through data visualization

We are working with a diverse group of partners – from governments and academics to non-governmental organizations and technology service providers – using information technology and data visualization to promote civic engagement in improving the health of our cities. This initiative is being developed to operate on a number of scales. We are installing sensing and monitoring systems on site that allow us to monitor and measure how the strategies we implemented to reduce resource consumption in the built environment and heal the natural landscape are working. Using real-time monitoring sensors and manual monitoring through citizen science (tinyurl.com/c9gkxv), we are measuring energy and water consumption, waste generation, and transportation-related impacts, temperature, rainfall, solar radiation, wind, and flora and fauna around the site.

Our web-enabled dashboard will distill and provide easy access to this information for public engagement and education. The dashboard will communicate how the site is performing, what we are learning as we go, and provide examples for what consumers can do to green their homes. On the macro scale, we are beginning to look at how to apply analytics and data visualization to help understand the complex systems dynamics of cities and render them more accessible to the general public.

Education and interpretation

Evergreen's website features an interactive green design exhibit (ebw.evergreen.ca/about/green-design) with separate pages that profile five basic principles of city building: adaptive reuse, brownfield remediation, building envelope, heating and cooling, and resource conservation. Web visitors can scroll through each page, clicking on numerous highlighted features, such as water-pervious paving or greenways on the brownfield remediation page. Each link profiles the actions Evergreen has taken to minimize the ecological foot-

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print of its construction and operations. This technology allows Evergreen to share its green design strategies for visitors remotely.

We also created an interactive map of Canada profiling school and community greening projects that Evergreen has directly supported. Staff plotted every Evergreen-related greening initiative across Canada (in all provinces and in two of the territories). As conveyed to our community partners:

"In the face of today's environmental concerns – from polluted air and water to species loss and climate change – it would be understandable if people felt a little overwhelmed. But this map of Canada (tinyurl.com/coqgw8b) tells a different story. It shows how your own greening project connects with hundreds of others like it across Canada. Collectively, you are ensuring that all Canadians stay connected with nature, one green space at a time."

Participatory monitoring strategies

Ten photo-monitoring stations across the site invite visitors to take photos from the exact location, helping Evergreen communicate through images, the story of ecological restoration over time at Evergreen Brick Works. For example, stations face onto a stormwater wetland pond, several large-scale garden beds, and a ravine slope that was stabilized and replanted through the construction process. Each station includes instructions for uploading their photos to Evergreen's Flickr account (tinyurl.com/c9ubgix). This strategy recognizes that the site is always changing, through the seasons and year-over-year, and it engages visitors in documenting its ecological health.

User apps for navigating cities

In launching our inaugural large-scale exhibit, MOVE: The Transportation Expo (ebw.evergreen.ca/move/), Evergreen, and our partner, the Institute without Boundaries of George Brown College (institutewithoutboundaries.com), led a design charette that challenged leaders from government, industry, and academia to find creative solutions to regional transportation challenges by drawing on global best practices. The charette process launched 10 multi-stakeholder groups to advance key innovations with the results providing original content that will be featured in the exhibits.

One design team was asked to design a street grid system that would involve a dynamic web of multi-functional and "flexible" streets – meeting a variety of needs at different times of the day and for different times of

the year. The team considered a host of mobility options for Toronto's densely populated urban core, focusing on commuters, residents, businesses, and tourists, and using a holistic approach to mobility and the complete-streets concept. A mobile application was developed that would enable users to make efficient transportation decisions based on real-time data and enhance their experience by providing incentives (e.g., discounts, reward points) for making more environmentally-friendly transportation choices.

Enhancing customer service

Because of the existing configuration of the industrial heritage buildings, the Welcome Desk for Evergreen Brick Works is not the first door that most visitors walk through. Rather, the most prominent doors are the entrance to a café and garden centre. This makes it difficult for visitors trying to find their way and for the staff running these spaces, who can become inundated with general inquiries. To assist visitors in navigating the multiple entry points on the site, we are setting up a virtual concierge. This technology will allow visitors to press an interactive screen to reach a person in addition to providing general information, wayfinding, and other site details. Cameras will be stationed at staff desks so that visitors will be able to (virtually) reach a real person.

Social media

Blogging, Twitter, and Facebook have all helped exponentially increase Evergreen's ability to communicate with groups and individuals. In two years, we have attracted approximately 10,000 new followers including access into new demographic and geographic areas. A recent partner event hosted at Evergreen Brick Works attracted over 3,000 visits – 2,000 more than anticipated – thanks to the power of social media. Specific campaigns to generate additional momentum are also organized. For example, to support MOVE: The Transportation Expo, Evergreen launched "Month in a Car" in which our candidate will spend one month (the total average time Torontonians commute to and from work every year) in a car, making media appearances, interacting with the public through social media, and interviewing industry experts to create a 12-part webisode series.

Social enterprise

The IT enhancements will also support our objective of operating Evergreen Brick Works as a financially self-sustaining enterprise by helping to strengthen earned revenue streams and sponsorship opportunities. ICT

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tools will improve the marketability of the site for third-party event clients, prospective tenants, and sponsors through high-bandwidth wireless access, rental of video conferencing units, and the ability to support larger conferences. Digital signage will offer new sponsor-recognition opportunities, and enhanced connectivity packages will provide new offerings to prospective and existing tenants.

Conclusion

These are still early days for the implementation of new ICT at Evergreen Brick Works and there is an ever-expanding array of new opportunities for reaching and engaging growing numbers of Canadians. Assessing these new ICT opportunities within a similar framework to the one used in the design and transformation of Evergreen Brick Works holds promise for increasing the effectiveness of new ICT initiatives. Though the substance is different, the context is similar.

Beyond Evergreen Brick Works and the emerging ICT, we also believe that the “network mindset”, that is, a “stance toward leadership that prioritizes openness, transparency, making connections and sharing control” (Scarce, 2011; tinyurl.com/6m2zsot) contributes to the effectiveness of these technologies. Positioning our work within the understanding and acknowledgement that we operate in an interdependent world requires coordination and collaboration. Keeping sight of this will help Evergreen learn, grow, and evolve these new technologies in the ongoing effort to create a lasting legacy that helps change our relationships with each other and the natural environment.

About the Author

Seana Irvine is Evergreen’s Chief Operating Officer, overseeing the management and coordination of Evergreen’s 100+ staff, driving key strategic directions, and leading and facilitating operational plans and processes. Seana was an original team member in the development and start-up of Evergreen Brick Works, helping drive program strategies in tandem with the design process. She has a Master’s degree in Environmental Studies (Planning) and serves on the boards of several not-for-profit organizations.

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Accelerating a Network Model of Care: Taking a Social Innovation to Scale

Vickie Cammack and Kerry Byrne

“*A social network is like a commonly owned forest: we all stand to benefit from it, but we also must work together to ensure it remains healthy and productive. This means that social networks require tending, by individuals, by groups and by institutions.*”

Nicholas Christakis and James Fowler
Authors of *Connected*

Government-funded systems of health and social care are facing enormous fiscal and human-resource challenges. The space for innovation in care is wide open and new disruptive patterns are emerging. These include self-management and personal budgets, participatory and integrated care, supported decision making and a renewed focus on prevention. Taking these disruptive patterns to scale can be accelerated by a technologically enabled shift to a network model of care to co-create the best outcomes for individuals, family caregivers, and health and social care organizations.

The connections, relationships, and activities within an individual's personal network lay the foundation for care that health and social care systems/policy must simultaneously support and draw on for positive outcomes. Practical tools, adequate information, and tangible resources are required to coordinate and sustain care.

Tyze Personal Networks is a social venture that uses technology to engage and inform the individual, their personal networks, and their care providers to co-create the best outcomes. In this article, we demonstrate how Tyze contributes to a shift to a network model of care by strengthening our networks and enhancing partnerships between care providers, individuals, and family and friends.

Introduction

Fiscal austerity, human resource challenges, geographically dispersed family and friends, and women in the workforce all contribute to the considerable pressure on formal care systems. Current approaches to care are generally professionally dominated and models of care typically operate without the active engagement of patients and families. However, our systems of health and social care are dependent upon the freely given care of friends, family, and neighbors. Family caregivers are the backbone of health and social care systems and enable formal care systems, but caregivers often do so at great cost to their own physical, psychological, and financial health (e.g., Schulz et al., 1995; tinyurl.com/73gcjua).

The space for innovation in care is wide open and new disruptive patterns are emerging. These include self-management and personal budgets, participatory and integrated care, supported decision-making, and a renewed focus on prevention. Taking these disruptive patterns to scale can be accelerated by a technologically enabled shift to a network model of care to co-create the best outcomes for individuals, family caregivers, and health and social care organizations. The purpose of this article is to examine how an online tool called Tyze Personal Networks is using technology to scale a social innovation aimed at moving from an individual model of care to a network model of care. In the following sections, a network model of care is described and the outcomes associated with networks are outlined.

Accelerating a Network Model of Care: Taking a Social Innovation to Scale

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Shifting from an Individual Model of Care to a Network Model of Care

For the most part, our current approaches to health and social care are dominated by individual models of care that focus on needs and deficiencies. Assessments, diagnosis, prescriptions, and interventions are frequently done as if we live in isolation. In an individual model of care (Figure 1), a person’s assets, including their family, friends, and community members are typically not considered or included in care consultations and planning.

A network centric model of care (Figure 2) expands current thinking about health and social care interactions and interventions to include the relationships and connections that individuals have with their friends, family members, community members, caregivers, and care partners. This model recognizes that, to achieve the best outcomes, individuals require communication, problem solving, and collaboration amongst *and* between informal networks and formal care providers. The systems of support available to people facing life challenges generally span two poles: professional care providers in health and social care settings or groups of family, friends, and neighbours. The latter are comprised of freely given relationships that are first and foremost based on care versus employment and accountability.

Together, these groups constitute an individual’s social convoy, that is, the people we count on and the people we draw into our networks during times of need. There is enormous value and wealth inherent in our social convoys. These networks of individuals keep us safe, secure, and healthy by contributing instrumental, informational, and emotional support. The value of our networks is evident through multiple studies demonstrating that people heal more quickly, get sick less often, and use health and human services more efficiently when they have a supportive network (e.g., Umberson and Montez, 2010: tinyurl.com/85fxc5k; Ellaway et al., 1999: tinyurl.com/7x5gp2a). Thus, our networks are key social determinants of our health and ample research reinforces the truth of the proverb “a good friend is the medicine of life”.

Individual Model of Care



Figure 1. Individual models of care dominate current approaches

Network Model of Care

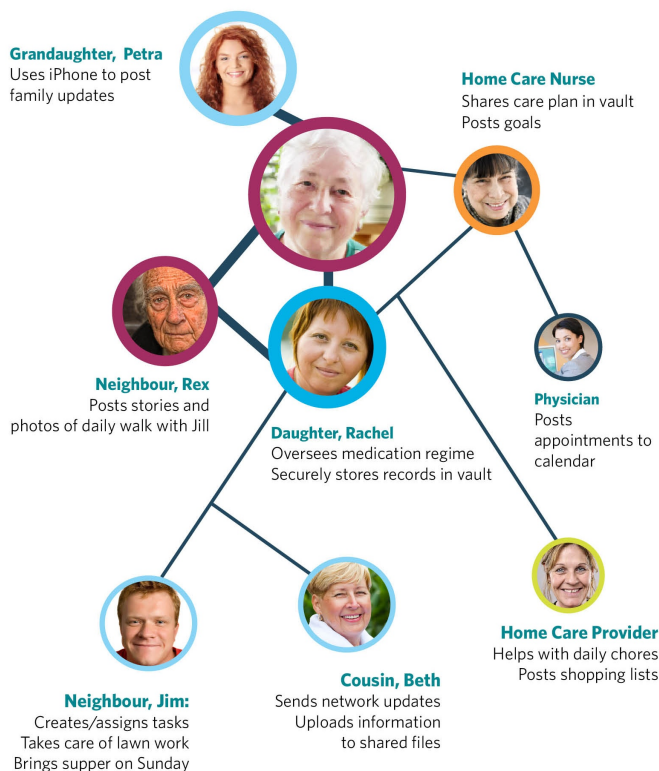


Figure 2. A network model of care includes relationships with friends, family, community members, caregivers, and care providers

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Moreover, the relationships and connections within our networks are the foundation of care that we draw on during times of both celebration and challenge; in particular, we draw on our personal networks. A personal network is a group of individuals who come together to provide intentional and purposeful support for a person(s) facing a life challenge. Notably, a network model of care moves us beyond looking at patients as “units of need” to incorporate the assets individuals possess within their personal networks including what they can do for themselves and what help is available to them. A network model of care also acknowledges that people want to help and care for one another. For example, over three-quarters of Canadians report extending help to family, friends, and neighbors, and 4 in 10 Canadians report being concerned about the needs of others, despite their own life pressures; this represents an increase from the mid 1990s when only 1 in 4 were concerned (Canadian Index of Well-Being, 2011; tinyurl.com/c3mttw2).

A network model of care builds upon connections between individuals, family, and friends and formal care systems to ensure communication and collaboration between everyone contributing to an individual’s well-being. The challenge is to facilitate communication and collaboration between two very different systems of care. Our formal systems operate with a systemic lens of efficiency, effectiveness, expertise, and accountability. In contrast, our family, friends, and neighbours contribute from a lens of love and care – frequently operating with passion, creativity, wisdom, and spontaneity. It is not surprising these two pillars of care struggle to work together. Creating bridges and pathways between these two systems that empower and enable the contributions of our personal network is a critical element in network centric care.

Tyze Personal Networks: A Social Innovation Journey

Practical tools, adequate information, and tangible resources are required to harness the power of personal networks of care. Tyze Personal Networks (tyze.com) is a social venture that uses technology to engage, connect, and inform the individual and their personal network members to co-create the best outcomes. Tyze is a social innovation that is using technology as the vehicle for change and was created to contribute to a shift in health and social care from individual to network models of care. Tyze is a technology-enabled service that

creates secure, online personal networks to facilitate the interweaving of relationships and connections. It combines expertise in creating resilient personal support with online social networking technologies. Tyze personal networks are created around a specific person or a specific situation. For instance, a network could centre on an older adult who has suffered a stroke, so that care providers and a larger circle of family and friends can provide companionship, monitoring, system navigation, and instrumental support. Access to a Tyze personal network is controlled by the patient/client or close family member, or friend, and network members must be invited to participate.

Tyze has 7000 users and has worked with 50 organizations in Canada, the United States, and the United Kingdom. Tyze partners include: the Province of British Columbia, the Robert Wood Johnson Foundation, the United Kingdom Department of Health, and the JW McConnell Family Foundation.

Tyze was created based on 20 years of experience using community connectors to facilitate personal networks for those who have been marginalized or isolated at Planned Lifetime Advocacy Network (PLAN; planinstitute.ca). This experience clearly demonstrated the power and potential of personal networks to change lives and improve health and social outcomes (Etmanski, 2009; tinyurl.com/83co8qg and 2000; tinyurl.com/7vvd96w). This core expertise is built into the Tyze software, the networks themselves, and the training materials. Tyze was created to widely distribute and scale PLAN’s strategic and proven approach to addressing isolation through the development of personal networks.

Tyze is built on experience and research about networks and the deep rooted knowledge that the lives of anyone experiencing a life challenge – people with disabilities, seniors, and many, many others – can be enriched and transformed by the experience of belonging. This knowledge and experience is embedded in Tyze as we move forward to create tools that can help people to do what they want to do: connect, collaborate, and support one another. The development of Tyze Personal networks is based on several key attributes and values underpinning a network model of care including:

1. A focus on strengthening relationships: Tyze personal networks are small, personal networks of people invested in caring relationships with one another. The interconnections, shared experiences, and motivations

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amongst network members are situated at the core of a network model of care.

2. Interdependence: This is the valued goal versus independence.

3. Asset-based: Families and patients/clients are empowered and engaged through an assumption of competence. For instance, information is shared knowing that patients/clients and family members are able to advocate and use the information to make the best decisions for themselves.

4. Reciprocity and celebration: These elements are central to network sustainability. Features such as photos, stories, and profiles all create opportunities to highlight contributions.

5. Purposeful: Each network has a shared purpose – this inspires action and participation.

6. Hospitable: The networks each have a coordinator or host who extends invitations, welcomes members and their contributions, and generates activity in a network.

7. Focus on contribution by all: Tyze personal networks make it easy for everyone to pitch in because they are “in the know” about specific needs and can contribute in a way that is convenient or meaningful for them.

8. Bridge to the formal system: Access to information and expertise assists personal networks to provide the best support possible. Tyze features such as the Vault and File drop provide safe ways to share confidential information. Paid professionals can easily participate for short periods of time, for example in acute episodes, and then be removed from the network.

In summary, a Tyze personal network is a space to build, grow, and mobilize our personal networks. It is, by design, a positive, welcoming, and warm space to come together and support one another.

Insights

Through partnerships with various health and social care organizations implementing Tyze, we have identified several challenges and opportunities for using technology to scale a network model of care, as detailed in a report by the Robert Wood Johnson Foundation (2011;

tinyurl.com/blm52bp). For instance, in some cases, individuals that are most in need of a network model of care do not have access to, or are not comfortable with, technology. For these reasons, *second-degree Internet access* – the engagement of persons who remain offline through loved ones who are online – is an increasingly important concept (Fox, 2010; tinyurl.com/2b5w3k5). It means that people who are not able to use computers (for a variety of reasons including disability or fear of computers) are still “online”, and thus accessing the benefits of being online, because of a relative who goes online with or for them.

As well, the bridge between individuals, family, and friends and formal care systems is a difficult one to build – there are privacy concerns and time and resource constraints. A key barrier to the expansion of a network model of care is that it requires shared communication and meaningful collaboration, across time and place, to achieve high-quality care. People from different sectors, backgrounds, and motivations must come together and collaborate to enhance care and support. Tyze personal networks function as hubs of communication including updates, messages, files, requests and offers of help, and resource sharing – all within a space that is private and secure. Clarity around the value proposition for everyone involved in a network model of care is critical. Improved care may be the key to “what’s in it for me” for some, while for others it is the social return on investment that is valued. Moreover, while patient engagement and the inclusion of family caregivers in healthcare teams has consistently been identified in multiple care situations, modern day healthcare systems struggle to do this in a meaningful way.

Network participation, that is, continued engagement and active involvement of members of the network, is both a challenge and an opportunity. Networks take time to create and nurture and require contributions from members to be sustained. Using technology opens up new ways of contributing for long-distance caregivers, as an example. Often times, people want to lend a hand to a care situation or a person’s life but are not sure what to do or how to do it. A network member may have a specific time they can pitch in or a special skill that can be incorporated into care, but without the interactions facilitated on the network, no one would “make the match” between what is available and the opportunity to contribute. Also, participation across generations, that is, intergenerational networks, ensure that everyone can contribute.

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Engaging in an online personal network makes it easier for people to know how to pitch in. As part of a mixed methods program of research at Tyze, including quarterly online surveys and qualitative interviews with our users, we found that Tyze strengthens connections and mobilizes support (see Cammack et al., 2012 P03.3; tinyurl.com/85ggcgo). For example, 90% of respondents to a recent Tyze user survey reported that their Tyze network helps them to share information and 70% reported that Tyze helped them contribute to a care task.

Finally, we have learned a great deal about what it takes to implement a new technology in health and social care settings. Perhaps the most important lesson is identifying social intrapreneurs – individuals who work inside organizations and develop, promote, and advocate for solutions such as Tyze. These individuals are willing to embrace novelty and the challenges that go along with it, because they are able to see past the barriers and are willing to work in partnership to develop innovations. They are also willing to pursue these innovations based on their unique knowledge of the values, goals, and workflows of their organizations and the people they serve. In our case, working closely with intrapreneurs has resulted in much success and learning – and close partnerships based on shared goals and a vision for better outcomes through a network model of care.

Conclusion

The economic, health, and social climate is ripe for a culture shift to a network model of care. Technology holds a great deal of promise to address some of the challenges, however, adoption of new models can be slow and scaling these models beyond pilot and early-stage testing is challenging. Building bridges between individuals, family, and friends and formal systems is historically difficult, with or without the use of a technology. Time and resources are often cited as barriers to communication and collaboration with family members and patients.

To effectively achieve a network model of care, multiple and disparate parts of health and social care support systems need to be connected. However, creating a value proposition that resonates for all network members (e.g., formal care providers, paid and unpaid network members, health and non-health) requires skilled communication and practical solutions given limited

resources and time pressures. Tyze Personal Networks has worked through several of these challenges and contributed to a shift to a network model of care by applying 20 years of experience building and sustaining personal networks; developing key partnerships with health and social care organizations and social intrapreneurs; and creating a research program focused on understanding and demonstrating the value of online personal networks.

About the Authors

Vickie Cammack is President and CEO of Tyze Personal Networks. In this role, Vickie focuses her attention and expertise on how best to deliver online, personal support networks to people facing life challenges. Vickie is also a co-founder of Planned Lifetime Advocacy Network (PLAN), a pioneer social enterprise supporting families to secure the future of their family member with a disability. She created PLAN's Personal Network program, a unique response to the isolation experienced by people with disabilities and mentored the spread of PLAN groups in 40 locations globally. Vickie is the recipient of the Meritorious Service Medal of Canada, the Canadian Psychological Association's Humanitarian Award, and Simon Fraser University President's Club Distinguished Community Leadership Award. She co-led a Canadian exploration on sustainability and social innovation and is a Fellow with Social Innovation Generation.

Kerry Byrne, PhD, is the Director of Research at Tyze Personal Networks. She has over 10 years of healthcare research experience and cares deeply about improving care for families. Through her work, she strives to give a voice to families' and patients' experiences with health and social care and improve the mobilization of formal and informal support for family caregivers and persons experiencing life challenges. Her areas of research expertise are in family caregiving, care transitions, home care, and relationship-centered care.

Citation: Cammack, V. and K. Byrne, M. 2012. Accelerating a Network Model of Care: Taking a Social Innovation to Scale. *Technology Innovation Management Review*. July 2012: 26-30.



Hacking Health: Bottom-up Innovation for Healthcare

Jeeshan Chowdhury

“*The great driver of scientific innovation and technological innovation has been the historic increase in connectivity and our ability to reach out and exchange ideas with other people. And to borrow other people's hunches and combine them with our hunches and turn them into something new.*”

Steve Johnson

Author of *Where Good Ideas Come From:
The Natural History of Innovation*

Healthcare is not sustainable and still functions with outdated technology (e.g., pagers, paper records). Top-down approaches by governments and corporations have failed to deliver digital technologies to modernize healthcare. Disruptive innovation must come from the ground up by bridging the gap between front-line health experts and innovators in the latest web and mobile technology. Hacking Health is a hackathon that is focused on social innovation more than technical innovation. Our approach to improve healthcare is to pair technological innovators with healthcare experts to build realistic, human-centric solutions to front-line healthcare problems.

Introduction

In many countries, healthcare services are not currently provided in a sustainable manner. Healthcare systems and institutions are still largely based on providing acute and reactionary care; this approach is not well suited to the increasing burden of chronic disease in an aging population that requires more preventative and long-term care (World Health Organization, 2002: tinyurl.com/d5mf4dp). Thus far, the response to growing demand has been dramatic increases in health spending. Over the past 50 years, health spending has outstripped overall growth in GDP for OECD countries (OECD, 2011: tinyurl.com/bq4prbp). In Canada, health spending in the last decade has grown at double of the rate of revenue growth (CIHI, 2011: tinyurl.com/d86xla7).

However, as health spending reaches almost 40% of government budgets, the affordability of health has become a major economic and social issue (OECD, 2011: tinyurl.com/bq4prbp). Rising health spending is a concern not only for our ability to provide healthcare; it also represents a significant opportunity cost because there is less room in government budgets for spending and in-

vestments in other areas such as education and the environment, which are increasingly being recognized as important determinants of health.

There is an urgent and dire need to innovate both the practice and delivery of healthcare. There is also a unique opportunity for social innovators to build enterprises with business models that can make a positive social impact by improving the sustainability of healthcare, which itself is a large and resilient market.

This article highlights the urgent need for innovation in the healthcare sector and the role that information technology can play. First, the article describes the failures of top-down approaches and the inadequacies of incomplete bottom-up approaches. Next, the potential of short-term, intense collaborations between developers – called “hackathons” – is described, focusing on a unique type of hackathon, called “Hacking Health”, which brings together healthcare professionals and software developers to quickly create working prototypes of new applications. This approach to social innovation using information technology holds promise for improving the quality and sustainability of healthcare.

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Top-down Failures

Based on past results, top-down approaches from either political or corporate leadership seem less and less likely to address problems with healthcare sustainability. Attempts to restrain public spending on healthcare and efforts for reform have been largely unviable politically (Hacker, 2004: tinyurl.com/7f2wx54). While there has been growing investment in healthcare information technologies, the implementation of these large-scale projects by both governments and corporations has been slow and marred by cost overruns, delays, and in some cases, scandal (Dunleavy et al., 2006: tinyurl.com/89zyb4e; OECD, 2000: tinyurl.com/84b26yy). For example, in Ontario, the issue of eHealth is still largely seen as a political liability. The otherwise-adept Google permanently shut down their foray into the sector, “Google Health” this past year (Lohr, 2011; tinyurl.com/4xz8a3m).

At the same time, healthcare as a sector has been largely resistant to reform and change by information technology (Barnett et al., 2011: tinyurl.com/7ero9b5; Boonstra and Broekhuis, 2010: tinyurl.com/7b559cg). While there has been dramatic and disruptive change to almost every other sector and industry over the past decades, healthcare remains rooted in antiquated practices and systems. For example, banking and airlines have made significant improvements in service delivery and efficiency using information technologies, particularly with web and mobile innovations (Bower, 2005: tinyurl.com/7nv872j). The delivery of healthcare, however, remains largely unchanged despite the advances and impact that these innovations have had in almost every other aspect of daily life (Masys, 2002: tinyurl.com/6ljzka3).

It is paradoxical that, although medicine has made remarkable progress in diagnosis and treatment, the practice and delivery of healthcare remains largely unchanged. For example, there has been considerable advancement in diagnostic technologies. In the past two decades, CT and MRI have become common procedures. Innovation progresses at a rapid pace with the introduction of PET scans and new procedures are continuously in development. However, over the same period, pagers and fax machines have largely become outdated yet they remain the mainstay means of communications within hospitals and between institutions. It is still common for a physician, who has a pager in one pocket and the smartphone in another, to communicate the results of an MRI by fax. This sophistication within disciplines alongside antiquated systems between individual silos is endemic in healthcare.

An Incomplete Bottom-up Approach

The spectacular failure of both governments and corporations in this space has demonstrated that technological innovation alone has been unable to make an impact in the way we practice and deliver healthcare. However, at the same time, there is a growing ecosystem of entrepreneurs and startups in healthcare (Deloitte, 2012; tinyurl.com/6uz7opj). These entrepreneurs bring an innovative approach to technology development that was initially pioneered by internet and mobile startups. Epitomized by Mark Zuckerberg in the Facebook shareholder’s prospect as the “Hacker Way” (2012; tinyurl.com/7rt5xjl), this approach focuses on the rapid and iterative development of small but scalable projects. “Hacking” rapidly builds small prototypes that are immediately tested and refined and built up into full-scale products or services. This is essentially the opposite approach to large-scale government or corporate initiatives that require significant capital and investment upfront to build a completed version that is then imposed on a system.

Nevertheless, these smaller initiatives have faced the same resistance to change by health institutions and professions that have bogged larger players including governments and established corporations. Thus, the majority of health startups remain relegated to fitness and wellness applications. Fitness and wellness are important dimensions of health and they represent large and lucrative markets. However, these applications fail to address the fundamental clinical or medical practices and systems that are in direst need of innovation (Maqubela, 2012; tinyurl.com/bo3xc4b).

The “Hacker Way” has been successful outside of health because the developer or hacker can identify themselves as the final user of the product or service. In other words, developers for the most part create products that they themselves would use. In travel, banking, media, and social networking the developers have easy access to the fundamental users: either themselves or the people around them. However, in health, there is barrier of access to users. Health professions are highly regulated and it is a significant investment to enter these fields. Thus, just as healthcare suffers from silos within the sector, healthcare itself is in a silo, separated from other fields and disciplines.

The barrier to useful clinical applications may likely be due the fact that in healthcare, unlike in other sectors, the developers of technology are not the end-users. The “scratch your own itch” approach breaks down. Simil-

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arly, because of the load of both training and daily operations, it is difficult for highly trained clinicians to also be skilled proficiently in the technical skills that are required for technology development. This situation is evident from a survey of healthcare startups and the products and services that being offered – they are for the most part limited to those user experiences accessible to developers, such as applications for diabetes management, scheduling services to assist in booking appointments, researching of medical information, and products geared for fitness or weight loss.

Hackathons

The overall barrier to more web and mobile solutions in healthcare is not itself an issue of technical innovation but rather a social innovation. Fundamentally, those with the technical skills to build solutions are separated from those who have the frontline experience and understanding to know which solutions should be built. The need for multidisciplinary approaches to healthcare itself is not new. There is a plethora of academic and industry programs that aim to either train health professionals with outside skills or to bring expertise from outside sectors into healthcare. However, these programs are long-term investments that can, over time, engender a more integrative approach to healthcare from practitioners and administrators.

Alternatively, the “hacker way” is embodied in practice by hackathons: small events where, over the course of day or week, programmers and developers collaborate intensely to build prototypes. These marathon events focus on rapidly iterative software development through which groups design, code, and build testable prototypes. Hackathons are well established in software companies and the model has been applied to specific software applications including health.

Steven Levy first wrote of students working in “marathon bursts” at MIT in the 1960s in *Hackers: Heroes of the Computer Revolution* (tinyurl.com/c6j85ey). Since then, hackathons have evolved to become routine and integral to development in companies such as Facebook, Foursquare, and Yelp. Their appeal has spread beyond just technology companies; *Wired* magazine reported that, in 2011, over 200 hackathons were held in the US alone (Leckart, 2012; tinyurl.com/6nktvpm). As the barriers to distribute and market software have fallen, especially through mobile platforms, hackathons have moved from rapid research and development within firms to entrepreneurial generation of new products and companies.

The impact of hackathons on entrepreneurship and creating lasting businesses is difficult to measure. However, there is growing anecdotal evidence of companies forming from hackathons, including the often-cited example of Group.me, a mobile messaging app that was acquired by Skype. Startup Weekend, a hackathon styled event, self reports that 36% of groups that form at their events continue to work together after three months (startupweekend.org/about/). Perhaps the best indication of the value of hackathons is the growing interest from established firms and venture capitalists. Microsoft and Nokia have each hosted hackathons as a means to spur innovative use of their products (microsoft.com/techedonline/). Venture capitalists are increasingly attending and judging hackathons as means to quickly identify potential ideas and teams.

Hacking Health

With the urgent need for disruptive innovation in health and the social barriers to change that currently exist, a group of young professionals spanning medicine, technology, and policy proposed an experiment to test whether the hackathon model could be applied not only to the development of projects but also to interdisciplinary teams. The experiment was Hacking Health (hackinghealth.ca), the first health-focused hackathon in Canada. The short-term goal was to develop working software that can immediately improve healthcare by solving known, bite-sized problems. More importantly, the long-term goal was to nurture ongoing collaborative partnerships between technology innovators and healthcare experts.

Unlike other hackathons, Hacking Health’s primary goal was not simply to spur the development of interesting projects, but it was to attempt to narrow the gap between frontline health professionals and technology experts in rapid but lasting way. It is necessary, but insufficient, to simply put different groups of people in the same room. The physical gap between the two groups should be seen more as a function of the social gap between them. Both health professionals and technology experts are highly trained in their own demanding domains, each with their own technical jargon and ingrained methods and perspectives. Thus at Hacking Health, there was considerable focus on educating and training each group to be able speak to one another. For example, before the actual event, we hosted a “pitch clinic” for health professionals to provide training and coaching on how to communicate effectively with technical talent. Similarly, for technical talent, we held a “meet up” days before the event to introduce

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software developers and web designers to the unique challenges of building solutions for healthcare.

Further, the open and rapid nature of hackathons is in stark contrast to the often regulated and incremental progress of clinical medicine. A number of the clinicians initially expressed concern of losing control of an important idea or ownership of intellectual property in such a setting. Fortunately, even if there is sensitive information, the short format of the hackathon is ideal for testing out one part of a larger vision. By analogy, one can still put together most of a recipe but hold back on sharing the special ingredients behind that secret sauce. Ultimately, for clinicians that may have valuable intellectual property, the real value will never be actualized unless they can execute. Even if a hacker could build their idea, they cannot test and implement it without a clinical partner. What assuaged clinicians is that both parties, health professional and hacker, need each other to move from idea to working product. At the level of the hackathon, intellectual property is owned by the team and it is up to individual teams to determine how it is shared. That being said, considering the short nature of the hackathon and very early nature of any prototypes formed, very little actual value resides in the limited code or early concepts produced at the hackathon itself. Ultimately, the true value lies in the team that has formed and the evolution of the members and project over time. If needed, the team may start afresh from the original code and concept worked on at the hackathon itself.

The purpose of a hackathons can be mainly a social or educational event, or it may be focused directly on launching apps; from the onset, Hacking Health was designed to catalyze entrepreneurial teams and projects to address issues in healthcare through business models. While a small number of teams pursued projects that were nonprofit, the social business model encouraged to the majority of teams was well received by both clinicians and technical experts. The clinicians who had identified problems that could be improved by technology and made the effort to attend Hacking Health also tended to be not only early adopters of technology but entrepreneurial as well. In interviews with developers and designers, many cited personal frustrations with the healthcare system as a primary motivator in attending and described a strong desire to use their skills to address those frustrations and access a robust and growing vertical market.

The first Hacking Health held in Montreal attracted over 200 health professionals and technical talent who

produced 19 working prototypes over the course of the two-day event. Projects ranged from a prescription drug reminder application for patients, to a 3D burn-area calculator for physicians, which uses the off-the-shelf Kinect video game accessory. The results can be seen at projects.hackinghealth.ca and this model will be replicated in similar events across Canada.

The first Hacking Health event demonstrated that interdisciplinary teams can be formed in a short period of time at a very low cost. However, it remains to be seen how this level of activity can be sustained over the medium and long term to the final goal of startup companies that are making a profitable and positive impact on healthcare. The next phase is supporting the self-selecting individuals that form nascent teams along the funnel of development. This will require a different set of incentives and supports apart from those that bring the teams together in the first place. This can be practically achieved by connecting the teams that form at Hacking Health to the growing ecosystem of startup incubators and accelerators that support early-stage entrepreneurs.

Conclusions

Information technologies, namely web and mobile services, have significant impact on a number of industries and sectors. These technologies are thus a keen target for social innovators to bring about change in their respective domain. While technology is always advancing and costs over time will reduce, the primary barrier to the introduction of these technologies to health, education, and other social sectors is no longer technical but rather a social question of how to best implement these solutions into a unique context.

The experiment of Hacking Health has shown that the rapid iterative mindset of hackers and hackathons is applicable not only to the development of prototypes but also teams that have a truly interdisciplinary approach to overcome social barriers to innovation. The key is to break down the barriers between technical experts who can build innovative technologies and the frontline practitioners who know which solutions can make an impact. Overcoming these barriers begins physically by placing both groups together in the same space but extends into bridging the language and cultural gaps between them.

The model of Hacking Health will be expanded to other cities starting first with Toronto in the fall of 2012. While a hackathon catalyzes early action and connec-

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tions, to form lasting start-up enterprises, these early teams and ideas will require nurturing and support to progress through the innovation pipeline. As such, in the future Hacking Health will begin to investigate and develop mechanisms to translate the spurt of activity during the short period of the hackathon into long-acting startups.

The lack of empirical data on the long-term impact of hackathons in generating lasting entrepreneurial activity is an important area for future research investigation in this field. Designing support systems for teams after hackathons that also track their progress is an attractive means to both increase the throughput of teams through the innovation pipeline but also produce empirical evidence. Nevertheless, the low cost and risk of these types of events – where technology innovators are introduced and trained to work with front-line practitioners – makes the hackathon approach an accessible and scalable means to foster innovation in almost any social sector.

About the Author

Jeeshan Chowdhury is completing an MD/DPhil at the Universities of Alberta and Oxford, where he studied as a Rhodes Scholar. Jeeshan's academic research focuses on emerging healthcare technologies, namely developing novel point-of-care diagnostics and quantitative methods to measure the impact of health information systems. Through his academic experience, Jeeshan has co-founded HackingHealth.ca to foster health technology innovations. He also launched EnlightHealth.com, a health tech startup that innovates web and mobile solutions for patients, providers, and clinics.

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Platformation: Cloud Computing Tools at the Service of Social Change

Anil Patel

“
*Because when ideas are shared, the possibilities don't add up.
They multiply.*”

Paul Romer
Economist, Entrepreneur, and Activist

The following article establishes some context and definitions for what is termed the “sharing imperative” – a movement or tendency towards sharing information online and in real time that has rapidly transformed several industries. As internet-enabled devices proliferate to all corners of the globe, ways of working and accessing information have changed. Users now expect to be able to access the products, services, and information that they want from anywhere, at any time, on any device.

This article addresses how the nonprofit sector might respond to those demands by embracing the sharing imperative. It suggests that how well an organization shares has become one of the most pressing governance questions a nonprofit organization must tackle. Finally, the article introduces Platformation, a project whereby tools that enable better inter and intra-organizational sharing are tested for scalability, affordability, interoperability, and security, all with a non-profit lens.

Introduction

There are now more devices connected to the Internet than there are people on the planet (tinyurl.com/3rk9yev). By 2020, CISCO predicts that 50 billion devices will be connected (tinyurl.com/7flbk3k). While some may feel overwhelmed by this proliferation of connectedness, others see opportunity. We envision connectivity as a driver of social change.

The implications of connectivity on business have been profound, as we will discuss later in this article. The same could be true for social change, but some “big picture” thinking will have to take place if this sector is to become equally adept at leveraging new ways of working and learning.

What would be the result if Canada's small percentage of the global do-good community were interconnected – if curated pieces of financial, operational, and programmatic information were connected online and in

real-time for staff, volunteers, donors, and other like-minded organizations to engage with and share? Consider one small, practical example: if just 10% of these organizations agreed to share a budget document that reflected each organization's anticipated printing needs over the next 12 months. One possible outcome of this sharing might be a commercial printer lobbying for their business because it represents much more than a few piecemeal jobs scattered throughout the year; this shared budget represents a larger win for the printer. The power of nonprofits to leverage their spending power for competitive rates is largely unexplored. However, a second potential outcome is far more interesting. If these organizations agree to retain a social enterprise printer, this scenario allows the social enterprise printer to secure predictable business, build capacity, and increase impact.

Sharing just one small piece of information – such as a printing schedule – would also make it easier to understand what like-minded organizations are doing right

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now and what they are doing in the future as well. This is important because the public and donor-based pressures being exerted upon nonprofits revolve around collaboration, finding efficiencies, and saving costs.

Getting better at sharing key information is also of critical importance to the Canadians who collectively contribute 160 million volunteer hours in a governance-related capacity, which includes sitting on boards, participating in finance committees, and chairing fundraising committees (tinyurl.com/84bwh3m). For each of these volunteers, their key activities revolve around reviewing, commenting upon, and in some cases, disseminating mission-critical pieces of information. When these volunteers are armed with key pieces of information – in real time and accessible from anywhere – they will be empowered to be better, more effective volunteers.

Social media has taught us that providing the right information at the right time will encourage greater engagement from stakeholders. For this reason, many “do-good” organizations seek to operate like the “open web”, which refers to an open and standardized infrastructure underlying the Internet. As stated in the book, *An Open Web* (tinyurl.com/butfwqz), “it is this very openness that has allowed for an unprecedented level of innovation, knowledge generation and creative expression on the Web and off.” The authors cited Wikipedia (wikipedia.org) as: “the canonical demonstration of openness. Its combined cognitive output, technically and normatively interoperable and infinitely modifiable, propelled it into one of the most well-known bodies of knowledge in human history.”

A non-profit sector that could combine knowledge and resources in a similar way, while allowing for infinite modifications, and not being limited by proprietary interfaces or platforms, would be operating like the open web. However, not everything a nonprofit does can be shared with everyone all the time. The real challenge to “do-good” organizations that would like to operate like the open web is this: how to determine which pieces of data need to be completely private (e.g., social enterprise client contact information) versus completely public (e.g., number of clients served). Understanding what to share when, with whom, and how to share it means that an organization needs to put a strong information and communication technology plan into place. Governance rules and protocols are critical and essential parts of this plan.

This article summarizes how visionary applications of cloud computing have transformed many different industries, before asking how the same vision could also change philanthropy. The article reveals what is possible for social organizations “in the cloud” and explores the new skills that organizations must develop to navigate the simultaneous demands for privacy, transparency, effectiveness, and collaboration. It also provides concrete examples of new platforms for information sharing that would benefit organizations of all shapes and sizes to enable social change.

Trends that Influence Technology Decisions

In order to properly explore how cloud-computing tools can contribute to social change, we need to first understand the cultural and organizational trends that strongly influence technology decisions. The following emerging themes and questions shape our thinking in this article:

- 1. The sharing imperative:** If other industries have undergone rapid and unprecedented change, what are the applicable trends that will also affect philanthropy?
- 2. Sharing as a governance question:** If effective 21st-century philanthropy requires new approaches to efficiency, collaboration, and transparency, what are the new tools and architecture to enable these approaches?
- 3. The art of the possible:** If we are to re-envision what pieces of financial, operational, and programmatic information are shared online and in real time, what are some concrete examples that justify further inquiry and testing?

The pressure to be collaborative, transparent, and efficient
Curating the right information to the right people becomes something around which all other governance principles are shaped. Get sharing right, and organizations will flourish in good times and bad. Get it wrong, and the results are donor fatigue and information overload, among other undesirable side effects, as the examples in this section will demonstrate.

Reduction in government grants is widely expected as governments fight debt and deficits (Perry, 2011; tinyurl.com/ccgjcvr). The February issue of *Imagine Canada's Sector Monitor* (Lasby and Barr, 2012; tinyurl.com/crqtntl) indicated that one-quarter of respondents believe the future of their organization is at risk and two-fifths of leaders expect an increase in demand for their services.

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Reduced levels of funding in the face of increased demand for services are paradoxical and the situation is unsustainable. Additionally, donor fatigue and dissatisfaction continue to rise due to the number and nature of requests individuals are receiving (Turcotte, 2012; tinyurl.com/btvldcc). This puts even more pressure on already cash-strapped charities.

These factors, and others, contribute to concrete management challenges for nonprofit leadership. These management challenges stem from a deeply felt pressure to be collaborative, transparent, and efficient – and not just to be good in one of these areas, but to enact all three simultaneously. Some examples of this pressure are outlined below.

In March 2012, the Drummond Report (tinyurl.com/8yvzycq) outlined 326 recommendations that the Government of Ontario could take to eliminate the deficit and reduce debt. The Ontario Nonprofit Network (tinyurl.com/7f7g2jw) analyzed the Drummond Report and documented key words and phrases that are relevant to the nonprofit sector, including:

- new approaches
- rethink accountability
- increase transparency
- explore further partnerships

In February 2011, the Canadian Broadcasting Corporation caught the Canadian Cancer Society flat footed when it aired a two-part investigative report scrutinizing 10 years of financial data and program results (tinyurl.com/44uxurz). Mark Blumberg, a tax lawyer who works with nonprofits and charities, was quoted in the article saying: “In the end, they need to listen to all the different interest groups and stakeholders that have an interest in the area, and just not prefer one and ignore the others.”

In the global arena, the International Aid Transparency Initiative (aidtransparency.net/iatl-standard) is putting new pressure on aid organizations of all shapes and sizes to demonstrate value for money. In Canada, Imagine Canada’s Standards Initiative (imaginecanada.ca/standards_initiative) has just announced the first cohort of organizations to pass through their time-intensive and rigorous accreditation process, which was “designed to strengthen public confidence in the charitable and nonprofit sector”.

These examples demonstrate the tremendous pressure exerted on nonprofits to demonstrate transparency, collaboration, and efficiency. If sharing is the way that efficiency, collaboration, and transparency can co-mingle, then we need to ask what steps need to be taken in order to put in place good IT systems and protocols around sharing.

Building an IT system for sharing

The sharing imperative teaches us that, for better or worse, the more people are connected to the Internet, the more they expect access to what they want, when they want it. As such, do-good organizations must be prepared to meet these new user expectations. One way to prepare is to encourage do-good organizations to make sharing information, online and in real time, a critical governance question. Now more than ever, an organization must have clear parameters, defined at the board level, that determine how, what, when, where, and with whom an organization shares information. Though it sounds as though these rules will constrain the flow of information, it is actually quite the opposite. Strong protocols mean that more people can be empowered to strategically deploy specific pieces of information to further organizational goals.

Figure 1 characterizes some of the thinking that a nonprofit must go through to build an IT system for sharing. An organization needs to take into account all of its financial, operational and programmatic information and decide what needs to be fully-private, semi-private, semi-public, or fully-public. As we move from the left to the right side of the figure, we move from hard data and numbers, through information and mechanics, and land on stories, effects, and meaning.

Consider how Figure 1 might be applied to the example of a small social service organization that has a few staff, several dozen dedicated volunteers, and annual revenue just over \$1 million:

1. *Activities* tend to be easy to predict. For instance, how many youth will be served at a local community centre for after-school programming they otherwise could not afford? What is the cost structure to provide adequate programming? What is the nature of the revenue sources? Does it cover the true cost of running the programming? If printing and catering are required, is there a local social enterprise that provides these services?
2. *Outcomes* are somewhat more predictable, but still generate some unknowns. For instance, of the particip-

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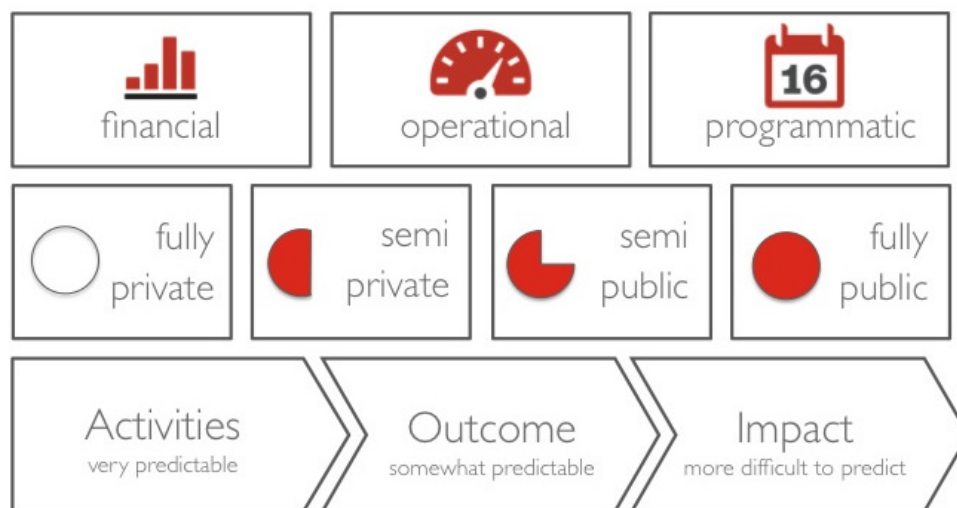


Figure 1. Learn to share what you need to share

ating youth, which ones felt the service was of value? For the ones who did, why? For those that did not, why not? Are staff and volunteers provided adequate training and supervision to ensure the programming is carried out?

3. *Impact* usually requires a much longer time period to generate results that can be analyzed. For instance, what is the true social return on investment that takes into account all the time and money needed? Has the appropriate amount of attribution been placed on the intervention? Compared to all the similar afterschool programming available to youth, how does this specific programming compare in terms of lasting change, scalability, or replication?

This type of thinking is essential for an organization to assess its information and consider how an IT system can address the pressures on collaboration, transparency, and efficiency. Once an organization has adopted a sharing mind-set, what IT tools are appropriate to put a system in place? In the next section, we introduce a project that is designed to help nonprofit organizations identify and use the tools they need to achieve their sharing goals.

Platformation

Thus far, the focus of this article has not been on technology, but rather it has been on the mind-set that a nonprofit organization needs to adopt (e.g., “we want to collaborate more”, “we want to be more efficient”, “we want to be more transparent”), and the realization

that follows (e.g., “sharing will help us do all three”). But what are the tools that a nonprofit can use that will help them get better at sharing? What tools will allow an organization to curate information online and in real time, while being both cost effective and scalable. Platformation has sought to address these questions.

Platformation (platformation.ca) is an online resource for members of the charitable sector interested in implementing free and low-cost online and mobile technology into their IT infrastructure.

Platformation prototypes new *platforms for information sharing* (platform + information = Platformation), which means it tests technological approaches that will enable nonprofits to operate like the open web.

As part of Platformation, the team at Framework (frameworkorg.org) has been testing more than 200 cloud-computing tools across a range of criteria including cost, security, customer service, scalability, and interoperability. We have looked at tools across 30 different categories, from accounting to project management to online ticket sales, to domain hosting. Coming as we do from the nonprofit sector, all tools are evaluated from this perspective.

One of the key criteria that we test for is interoperability; or, how well do tools (often from different software vendors) work with each other. We call this approach: “open architecture”. Open architecture differs from open source in one fundamental way. Open architecture is a software procurement strategy that considers

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how well one software application provider “talks to” another, regardless of whether it is open source or proprietary. It also takes into consideration things such as, but not limited to, vendor viability (e.g., will they go bankrupt?), how securely they store customer data, customer support, and pricing plans. For instance, the file-sharing provider Box.com (box.com) allows file sharing with project management provider SmartSheet (smartsheet.com), reducing the need to log in at two different places. Similarly, SmartSheet integrates with the Salesforce.com (salesforce.com) relationship management system, as does Box.com; all three are integrated with Google Apps for Business (google.com/enterprise/apps/business/).

Furthermore, core pieces of data, information, and documents within can be selectively shared with different levels of permissions and visibility. In the case of Box.com, budgets can be securely shared with specific users or pre-approved web addresses or embedded on public web pages. SmartSheet project documents that are read-only, can also be shared via URLs (web addresses) or embedded on web pages. For less sensitive information, an embedded or shared SmartSheet can have viewable attachments and discussions. The combined power of these tools is impressive.

When evaluating the total cost of subscribing to these tools, organizations need to evaluate the sharing and collaborative features of the whole software-as-a-service stack (SaaS stack). For a team of five people, a budget between \$1,000 to \$2,500 per year would be needed to run the organization from the Internet:

- Salesforce: basic contact manager at \$5/user/month
- Box.com: \$15/user/month
- SmartSheet: \$500 for 150 sheets and 3 administrative users
- Google Apps for Business: \$50/user/year

In this particular configuration, users can decide where and how much information is shared with a variety of stakeholders.

By testing potential applications and forming a collaborative with other groups working at the intersection of technology and nonprofit organizations, Platformation provides nonprofit organizations with a menu of cloud-computing options to suit their organization’s sharing needs. Of course, before an organization can begin to choose tools that enable sharing, sharing must be addressed as a governance question, as we emphasized above. As Platformation becomes increasingly useful as

a hardware store of sorts, where the browser can be sure all the tools on display are of the highest quality, so too must we be aware that tools are only as good as the plan that determines how they will be used.

As a number of organizations have begun to draw on the knowledge base that is Platformation, they have simultaneously had to spend some time thinking through their organization’s relationship to technology. Is the responsibility for technology decisions in one person’s hands, or distributed broadly? Does technology enable or impede mission success? Do our technology choices enable room for growth and innovation, or are we bound by the limits of the tools we have chosen?

All these, and more, are critical questions that must be posed by any organization as they construct their optimal platform to enable information sharing.

Applying open architecture to nonprofit impact

Consider the time that can be freed up by making basic financial information available online and in real time and making it available to vendors, volunteers, funders, and others, to access in their own time. As shown in Figure 2, imagine that Nonprofit A has begun sharing its 12-month printing budget forecast on its website. The budget spreadsheet and printing specs folder can be shared as easily as a Youtube video.

The manager at “Social Enterprise Printing” learns about the forecast document and then quickly pulls the data into its web infrastructure by archiving its URL or HTML code. The same budget spreadsheet and printing needs are now visible in two places. This signals another like-minded organization – Nonprofit B – to consider creating and sharing a similar forecast using a similar method on its own IT infrastructure, which the manager at Social Enterprise Printing also pulls into its architecture.

Next consider Funder A, who funds all three organizations and who can now instantly see the connections that are being made. Simultaneously, the information is shared with Funder B, who has been trying to establish new granting principles around impact investing, and now encourages Nonprofit C to consider doing the same.

Now imagine this sharing has happened amongst just 10% of the nonprofit community in Canada. With limited cost and technical know-how, an information superhighway that has improved the IT capacity of each participating organization, has also potentially influ-

Platformation: Cloud Computing Tools at the Service of Social Change

Anil Patel

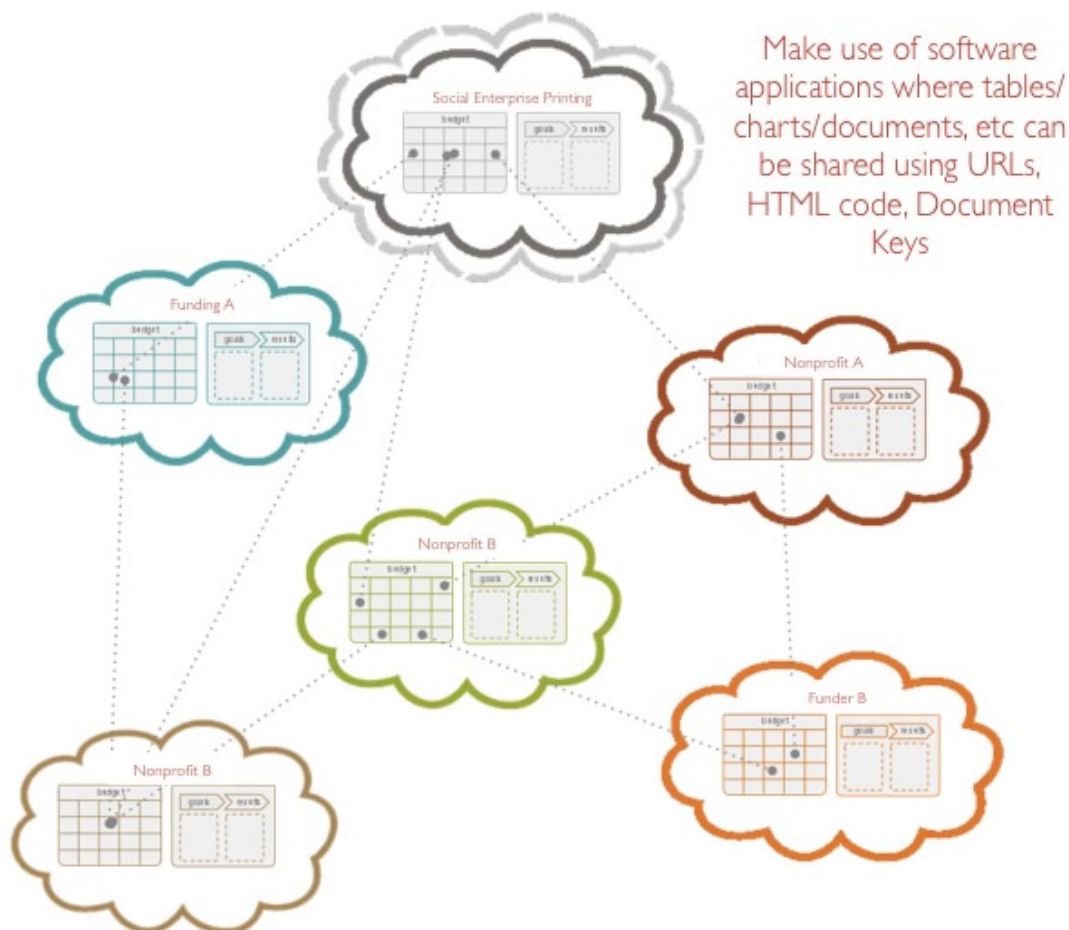


Figure 2. Allow information to flow freely

enced the way that millions of dollars flow between like-minded organizations, both nonprofit and social enterprise. This is the vision that Platformation is working to realize.

Conclusion

This article explored the trends that are driving the sharing imperative and asked how this imperative will affect the nonprofit sector. As more and more people are connected to the internet and demanding immediate access to information, the expectations and pressures on the nonprofit sector have changed. There are many benefits to sharing key pieces of financial, operational, and programmatic information; by testing cloud-based tools for their suitability for nonprofit organizational needs, Platformation is helping nonprofits realize these benefits through increased levels of collaboration, transparency, and efficiency.

About the Author

Anil Patel is an Ashoka Fellow and Executive Director of Framework, the charity that runs the Timeraiser. The Timeraiser is part volunteer fair, part silent art auction, and part night on the town. To date, the Timeraiser has generated 100,000 volunteer hours, engaged 6,500 Canadians to pick up a cause, worked with more than 350 agencies in need of skilled volunteers, and invested \$580,000 in the careers of Canadian artists. In the decade ahead, Anil will be focused on how nonprofits and funding organizations can share critical information online and in real time.

Citation: Patel, A. 2012. Platformation: Cloud Computing Tools at the Service of Social Change. *Technology Innovation Management Review*. July 2012: 36-41.



TIM Lecture Series

TELUS in Health: Improving Health Outcomes for All Canadians

Giovanni Pizzoferrato

“ *People need to communicate.
People need to connect to communicate.
And they need to share their ideas.* ”

Giovanni Pizzoferrato
Senior Manager,
Technology Strategy TELUS

Overview

The fifth TIM lecture of 2012 was presented by Giovanni Pizzoferrato, Senior Manager of Technology Strategy at TELUS (telus.com), who described the approach TELUS has taken as a telecommunications company entering the healthcare market. The event was held at Carleton University in Ottawa, Canada, on July 5th, 2012.

The TIM Lecture Series is hosted by the Technology Innovation Management program (TIM; carleton.ca/tim) at Carleton University. The lectures provide a forum to promote the transfer of knowledge from university research to technology company executives and entrepreneurs as well as research and development personnel. Readers are encouraged to share related insights or provide feedback on the presentation or the TIM Lecture Series, including recommendations of future speakers.

This report summarizes the presentation and its key messages, including the lessons learned and actions identified by audience members. The slides from his presentation are available here: tinyurl.com/dx8zaa6

Summary

Giovanni Pizzoferrato set the scene for the audience by describing the market and industry realities that TELUS must face when developing its healthcare “game plan”: many of the challenges that must be overcome are from

outside forces, that is, they are beyond TELUS’ control. Accordingly, TELUS has responded with an “outside-in” approach to innovation, which requires an outward-looking perspective where consumer trends, demands, and behaviours are carefully considered when developing internal innovation. This outside-in approach was a recurring theme throughout the presentation, as Pizzoferrato described case studies where TELUS had used this approach to innovate “on top of” existing waves of innovation to better meet the needs of its customers.

As a telecommunications company, TELUS has identified three consumer demands, which are the need to connect, communicate, and collaborate. Underpinning these three demands are the driving forces that determine the pace of evolution and define consumer needs: i) social media; ii) mobilization; iii) consumerization; and iv) hyper-connectivity.

Social media

Social media is not just about being connected, it is about making a meaningful connection. Social media is a powerful outside force that has led to non-traditional user behaviour and usage, which in turn has led to rapid growth in mobile traffic. However, in Canada, we are missing the ability to use social media to effect change in healthcare. TELUS has used the outside-in approach to assess how the behaviours and needs associated with social media can be applied to the enterprise in the healthcare market. The outside-in approach has led TELUS to change its processes and develop closer relationships with its customers.

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Mobilization

The proliferation of smartphones and mobile apps is a disturbance that enterprise cannot ignore. Current and future growth in this area is fueled by existing market bases in both e-commerce and feature-phone devices; the easy transition to m-commerce and smartphones is further accelerating the growth in mobile traffic. Although the mobile Internet is fragmented by a challenging array of app stores, application types, device capabilities, platforms, and platform versions – also known as the “splinternet” – TELUS believes that this situation can be overcome and will change if enough value can be provided to customers.

Consumerization

We are moving from a context of limited connectivity, fixed primary devices, IT-led control, and management and security inside firewalls to a context of “always on, anywhere”, mobile primary devices, user demands for agility and freedom, and boundary-less security and manageability. Thus, the consumerization of IT is fueling innovation, and this is yet another outside force. Established industry players can no longer control the sources of change and must respond to a faster pace of innovation.

Hyper-connectivity

Hyper-connectivity refers to the demand for “super-fast” Internet access that is everywhere and always on. In addition to the overall increases in demand, the patterns of usage have also changed. In the past, telecommunications companies needed to manage the “busy hour”, which refers to peak network demand; now, the increasing demands that mobile devices put on the network through signaling result in constant high levels of network traffic, even when users are asleep. TELUS, through extensive network resource planning, realizes that it takes more than “adding more pipe” to meet the needs of consumers.

Addressing Current Healthcare Challenges

Pizzoferrato next outlined the sustainability challenges of the healthcare system in Canada:

1. Increased prevalence of chronic disease (and associated management challenges)
2. Quality issues with medication errors and compliance
3. Long wait times, poor access to care, and lack of continuity of care

4. Lack of focus on prevention and self-management by patients
5. Need for performance improvements to address cost challenges

These challenges explain why TELUS has entered the healthcare market; TELUS believes that, “to support a profound healthcare transformation agenda, investment in health IT needs to focus first and foremost on providing solutions that will address these key issues in a sustainable way” and that TELUS is well positioned to provide these solutions.

Organizing information

Providers, patients, and payers require applications that will help them manage great amounts of data. Accordingly, TELUS is developing applications to manage health information and clinical workflows at various levels, such as:

1. Health regions and Hospitals: electronic health records, clinical information systems, business analytics relating to public health, medication reconciliation, integrated bedside terminals, human resources outsourcing, etc.
2. First-line care: electronic medical records, drug information systems, eReferrals, care coordination, telehealth, etc.
3. Home care and self care: remote patient monitoring, chronic disease management, personal health records, consumer applications, etc.
4. Pharmacies: pharmacy management systems, point-of-sales, consumer portals and applications, mobile applications for prescription renewal and online shopping, business analytics relating to drug prescriptions, etc.
5. Insurers and employers: claims management, provider management, business analytics relating to benefit program costs, human resources outsourcing, etc.

Moving information securely

Today, healthcare information must move securely across organizations, not reside in individual silos where it cannot be shared. TELUS develops “care continuum” solutions (e.g., portals and platforms) to connect applications for securing information sharing.

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Connecting to share information

Through its services in healthcare, TELUS is able to connect physicians, pharmacists, and allied healthcare providers, but the telecommunications company is also able to connect to its large consumer base, which includes patients. This reach enables more rapid acceptance and adoption of health IT solutions.

Making information more meaningful

Through its business intelligence tools and expertise, TELUS provides analytics and insights to help make health information meaningful.

Case Studies

In the second half of the presentation, Pizzoferrato described two case studies to illustrate the outside-in approach used by TELUS in developing their healthcare solutions: remote patient monitoring and mobility for pharmacies.

Remote patient monitoring

TELUS has developed a solution for remote patient monitoring that includes:

1. Personalized, evidence-based care plans
2. Multiple modes of communication
3. A comprehensive organizational hierarchy

This solution encourages continuity of healthcare interventions. For patients, an additional advantage to this new solution is that it does not depend on proprietary or landline technology – if they wish, patients can use their own devices, including tablets or smartphones. This point further demonstrates the outside-in approach because TELUS recognizes that patients may be more comfortable integrating the monitoring solution into the way they live their life already, with devices they are already familiar with. This solution increases compliance and gives patients the option to continue using some of the applications after the clinical intervention is over.

Mobility for pharmacies

TELUS Pharmacy integrates a pharmacy's website and mobile applications with tools and web services that provide: i) communication with healthcare professionals; ii) online prescription renewal; and iii) access to personal health data and a pharmacological profile. For

patients, medication management becomes simplified through one-click prescription refills, access to their medication history, and information about medications. For the pharmacy, their business can be enhanced with the option to add real-time product promotions, including geolocation of points of sales.

Lessons Learned

In the discussions that followed the first and second parts of the presentation, audience members shared the lessons learned they learned from the presentation and injected their own knowledge and experience into the conversation.

The audience also identified the following key takeaways from the presentation:

1. There is great value in engaging directly with customers, including observing how they work and how they use (or do not use) technology.
2. The healthcare system in Canada needs a unified platform.
3. There are huge gaps in the healthcare system, which means there are a lot of opportunities provided we can build a bridge over the conservatism of healthcare.
4. There are gaps in security, and therefore there are opportunities there.
5. Existing innovations in technology provide opportunities to make further innovations within and beyond healthcare.
6. Hospitals are very concerned with the bottom line.
7. Good information saves lives and reduces costs.
8. Consumers highly value recommendations from other consumers. This has implications for opportunities and it suggests that word-of-mouth marketing lends itself to mobile applications and connectivity.
9. Despite recent innovations in wireless and mobile, the healthcare system still has low-tech dependencies (e.g., some home care solutions still depend on landlines).

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10. There are a number of different providers that control various pieces of data about us, but we are not taking ownership of that data.
11. We are seeing the democratization of product development.
12. The focus is on outcomes, not technology.
13. It is important to be “device agnostic” wherever possible.
14. There are many opportunities to create applications for individual and personal care, not just hospital systems.
15. The remote-patient monitoring solution has been well thought out.
16. The outside-in approach has great potential for developing great patient health records.
17. TELUS works with incubators and startups – this can be a way for small startups to build relationships and access the healthcare market.

Complementary Presentations

Following Giovanni Pizzoferrato’s presentation, brief presentations from entrepreneurs in the Lead to Win ([leadtoWin](#)) program provided a glimpse into some healthcare-related opportunities:

Fitminds ([fitminds.ca](#)) by Nicole Scheidl

- *Cognitive care solutions for professional and family caregivers*

InstantSI ([instantsi.com](#)) by Maciek Kozlowski

- *Remote simultaneous interpretation applications in healthcare*

GreenSignatures ([greensignatures.com](#)) by Jane He

- *Secure online document signing*

About the Speaker

Giovanni Pizzoferrato is a seasoned telecom leader with over 10 years of experience building Wire Line and Wireless Networks across Canada. Giovanni is currently focusing on the mHealth application platforms at TELUS to enable mobile health in Canada. Giovanni also has built and led numerous successful engineering teams at TELUS. Giovanni was also responsible for the TELUS National Labs team, which built national standard development environments for all of TELUS products and services. Giovanni was also an influential leader in the Innovation Centre Program and the Graduate Engineering Program at TELUS.

Citation: Pizzoferrato, G. 2012. TIM Lecture Series - TELUS in Health: Improving Health Outcomes for All Canadians. *Technology Innovation Management Review*. July 2012: 42-45.



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Author Guidelines

These guidelines should assist in the process of translating your expertise into a focused article that adds to the knowledge resources available through the *Technology Innovation Management Review*. Prior to writing an article, we recommend that you contact the Editor to discuss your article topic, the author guidelines, upcoming editorial themes, and the submission process: timreview.ca/contact

Topic

Start by asking yourself:

- Does my research or experience provide any new insights or perspectives?
- Do I often find myself having to explain this topic when I meet people as they are unaware of its relevance?
- Do I believe that I could have saved myself time, money, and frustration if someone had explained to me the issues surrounding this topic?
- Am I constantly correcting misconceptions regarding this topic?
- Am I considered to be an expert in this field? For example, do I present my research or experience at conferences?

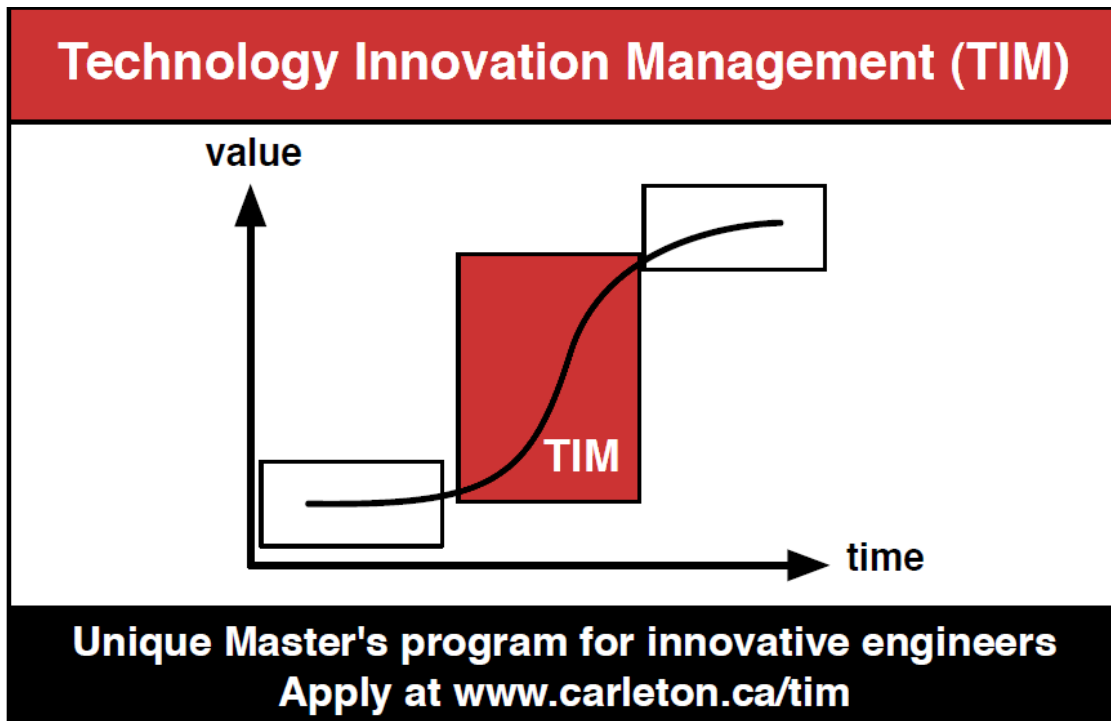
If your answer is "yes" to any of these questions, your topic is likely of interest to readers of the TIM Review.

When writing your article, keep the following points in mind:

- Emphasize the practical application of your insights or research.
- Thoroughly examine the topic; don't leave the reader wishing for more.
- Know your central theme and stick to it.
- Demonstrate your depth of understanding for the topic, and that you have considered its benefits, possible outcomes, and applicability.
- Write in a formal, analytical style. Third-person voice is recommended; first-person voice may also be acceptable depending on the perspective of your article.

Format

1. Use an article template: [.doc](#) [.odt](#)
2. Indicate if your submission has been previously published elsewhere. This is to ensure that we don't infringe upon another publisher's copyright policy.
3. Do not send articles shorter than 1500 words or longer than 3000 words.
4. Begin with a thought-provoking quotation that matches the spirit of the article. Research the source of your quotation in order to provide proper attribution.
5. Include a 2-3 paragraph abstract that provides the key messages you will be presenting in the article.
6. Only the essential references should be included. The URL to an online reference is preferred; where no online reference exists, include the name of the person and the full title of the article or book containing the referenced text. If the reference is from a personal communication, ensure that you have permission to use the quote and include a comment to that effect.
7. Provide a 2-3 paragraph conclusion that summarizes the article's main points and leaves the reader with the most important messages.
8. Include a 75-150 word biography.
9. If there are any additional texts that would be of interest to readers, include their full title and location URL.
10. Include 5 keywords for the article's metadata to assist search engines in finding your article.
11. Include any figures at the appropriate locations in the article, but also send separate graphic files at maximum resolution available for each figure.



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