



# INNOVATION YORK

***FY 2013/14***

***Collaborating for Innovation***

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## MESSAGE FROM THE VICE-PRESIDENT



Well into our second year of operation, I am pleased to report that the launch and subsequent operation of Innovation York has been a success. As you will see from this report, there has been a significant amount of activity since Innovation York's inception in September, 2012 and a number of exciting success stories that we have highlighted.

Innovation York's mandate to provide industry liaison and commercialization services for the University has successfully been delivered through four service streams: **Agreements** – management of the agreement process on behalf of researchers and the university in order to effectively facilitate research projects and commercialize intellectual assets; **Industry Liaison** - creation and management of relationships between researchers and industry, in order to create actionable research projects infused with industry-research dollars; **Commercialization** –management of the commercialization process to assist researchers in commercializing their intellectual assets, in order to maximize social and economic impact; **Entrepreneurship** – support of entrepreneurs and start-up companies developed by York researchers and affiliates through the provision of education, mentorship, and accelerator space within the Markham Convergence Centre. These services have assisted many researchers in creating innovative research projects and translating research outcomes into the commercial market.

Over the past year and a half, Innovation York has shown continual growth in the services it provides to the York University community, as well as an increase in strong engagement with faculty members, students, and trainees. We aspire to continue this growth, engaging more and more researchers at the university and providing increasingly effective, efficient, and meaningful services.

A handwritten signature in black ink, appearing to read 'Robert Haché', written in a cursive style.

Robert Haché  
Vice-President, Research & Innovation

## MESSAGE FROM THE DIRECTOR



After officially launching in September 2012, Innovation York has spent the past year and a half ensuring the delivery of value-added services and supporting the culture of research intensification, innovation and entrepreneurship that is rapidly growing at York University. By supporting this culture and advancing it in meaningful ways, Innovation York can play a pivotal role in supporting research at the University, assisting with the translation of research outcomes and fostering the entrepreneurial spirit of faculty members, trainees, and students across the organization.

FY2013/14 was a busy year; Innovation York team members worked diligently within all four service streams to ensure the effective and valuable delivery of service. The research agreements stream reviewed and executed 541 agreements, which was a 29% increase from the previous year; the industry liaison had 160 meaningful industry interactions, which assisted in obtaining more than \$5,000,000 in cash and in-kind contributions for York-based research projects; the commercialization stream successfully created a start-up company, Kaypok, and closed two major deals, facilitating intellectual property acquisitions of technology developed in Schulich and Lassonde; and the entrepreneurship stream supported 3 companies in the Innovation York MCC space, sponsored a very successful Hackfest, hosted by the Steacie Library, and co-hosted a commercialization workshop with CommerceLab and the Canadian Digital Media Network.

Our partnerships with external organizations and internal units continue to be of utmost importance in the delivery of our service. We continue to work closely with ventureLAB, our Regional Innovation Centre and MaRS Innovation, our external commercialization partner. Internally we work closely with the Office of the Counsel, Risk Management and Insurance, and Research Accounting in facilitating our agreement process and very closely with the Office of the Counsel in the support and management of our patent portfolio. In addition, this year, we entered into a strategic relationship with IP Osgoode, the Intellectual Property Law and Technology Program in Osgoode Hall Law School. Through this intra-institutional partnership, both units hope to reach a greater number of faculty members and students, and provide enhanced support services overall.

Now engaged with a large percentage of the researchers across the University and over 240 companies, Innovation York has found its place as the office with the mandate to provide agreement, industry liaison, commercialization and entrepreneurship services to the University. We remain dedicated to our vision and strategic goals, but look forward to the coming year where we will continue to evolve and grow our services.

A handwritten signature in black ink that reads "S Howe". The signature is fluid and cursive.

Sarah Howe  
Director, Innovation York

## YEAR IN REVIEW

**542** Agreements Reviewed with a Value of **\$12.5** Million

**6** Controlled Goods Screened

**160** Industry Interactions

Assisted in obtaining more than **\$5,000,000** in Cash and In-Kind Contributions for **30** Research Grants

**\$325,000** Received in Commercialization Funding

**10** Invention Disclosures Received

**14** Active Commercialization Projects

**12** Patent Applications Filed

**One** Start-up Company

Equity in **3** Companies

**2** Licenses/Options Executed

**3** Companies Using MCC Space

Delivered **21** Presentations

# SERVICE STREAM ACTIVITY SNAPSHOTS

## *Agreements*

Research agreement services have been active at the University for many years; however, we continue to see a drastic increase in the number and the complexity of agreements. Over the past decade, the number of agreements reviewed at the University has increased by more than 130%, many of which are more complex, involve a greater number of stakeholders than previous years, and have larger dollar values. One interesting example is the network agreement put in place between York University and nine other universities, to facilitate the continuation of the National knowledge mobilization network.

ResearchImpact-RéseauImpactRecherche (RIR) is Canada's knowledge mobilization network. RIR is a pan-Canadian network of universities committed to maximizing the impact of academic research for the social, economic, environmental and health benefits of Canadians. RIR members achieve this mandate by investing in knowledge mobilization, supporting collaborations for research and learning and connecting research beyond the bounds of academia.

Innovation York led the amendment of the RIR funding agreement. This required negotiating new terms with the six existing and the four new RIR members, as well as amending the terms of the budget. Having a strong inter-institutional agreement allows RIR to develop a shared understanding of the role of members as well as the role of the lead institution.

## *Industry Liaison*

Industry liaison services have been active since September 2012, when Innovation York was launched and an Industry Liaison Manager hired. It is the goal of the industry liaison stream to create a suit of relationships with industry, so that we can draw upon those relationships when researchers are developing new research projects. Furthermore, it is imperative we have an understanding of the funding landscape, so that we can advise and support researchers and their industry partners in obtaining funding for these projects.

The industry liaison stream has developed relationships with more than 160 companies in the last fiscal year and with more than 240 since the inception of Innovation York. Although it may be a couple of years before we start to see a significant increase in the number of formal large-scale research partnerships resulting from these relationships, we have already begun to see a positive effect in the number of MITACS grants received by researchers at the University. MITACS funding requires and industry match. The provision of industry liaison services has increased our ability to obtain that match, as evidenced in the following table where we see a 130% increase in the MITACS funding received by the University over the past 3 years:

| <b>Fiscal Year</b> | <b>MITACS Funding*</b> |
|--------------------|------------------------|
| 2011/2012          | \$216,650              |
| 2012/2013          | \$466,666              |
| 2013/2014          | \$500,000              |

\*Funding is only the MITACS portion and does not include the industry contribution

## **Commercialization**

In furthering the commercialization activities of Innovation York, it is essential to leverage government-based funding. In order to develop technology to a stage where a company may be interested in licensing it or venture capital may be interested in investing in it, commercialization grants are essential, as basic research grants typically do not allow for technology development activities. Granting agencies such as the NSERC and OCE are key funders of this type of grant.

This year Innovation York assisted a number of inventors, to write and submit 8 funding applications. Six of these applications were successful and had a value of \$325,000. The following are a list of technologies that received this funding:

| <b>Technology</b>   | <b>Researcher &amp; Faculty</b>                         |
|---|---|
| Kaypok: A root-case analytics analysis tool   | Razieh Niazi, Lassonde School of Engineering (formerly) |
| An Auto-locking Laser System for Industrial Gravimeters and Spectroscopic Applications*       | Anantharaman Kumarakrishnan, Faculty of Science         |
| Daagu: An interactive online platform that promotes collaboration and the learning experience | Gail Mitchell, Faculty of Health                        |
| Attentive Panoramic Visual Sensor   | James Elder, Faculty of Health                          |
| CloudInsight: a precision data sharing tool   | Marin Litoiu, Faculty of LA&PS                          |

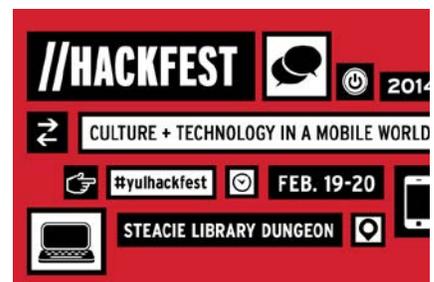
\*Two grants were obtained to support this project.

## **Entrepreneurship**

In supporting entrepreneurship at the University, Innovation York has created a space within the Markham Convergence Centre in order to support and accelerate the growth of York-affiliated start-up companies. During the past year, Innovation York was pleased to support three start-up companies in this space: Engage Biomechanics founded by two researchers from the Faculty of Health and Lassonde School of Engineering respectively; Kaypok founded by a Ph.D. student from the Lassonde School of Engineering; and GeoCloud founded by a researcher and graduate student from the Lassonde School of Engineering.

Supporting student entrepreneurship is an important component of Innovation York's entrepreneurship stream. In February 2014, Innovation York proudly sponsored the 2<sup>nd</sup> Annual Steacie Library Hackfest. The Hackfest was a two day event that brought together students with computer language skills to collaborate on a particular software project, and bring that project to reality. Teams are comprised of people from different disciplines such as Computer Science and Engineering, Fine Arts, Business, Digital Media, Health, Marketing and more.

This year's theme was Culture and Technology in a Mobile World. The theme was about creating an app that can be about anything, health, accessibility, gaming, organizing, chatting or create an app for York. As a sponsor of this event and mentoring the teams, Innovation York supported the students in their efforts throughout both days and further worked with those whose projects had commercial potential.



## CELEBRATING OUR INNOVATIVE RESEARCHERS

**PROBLEM:** The digital universe continues to expand at an incredible rate; it is estimated that it will reach 40 ZB by 2020. Current text analytics tools are immature and require great precision to train the system.

**SOLUTION:** Kaypok's revolutionary text analytics engine provides deep text insights into massive amounts of data in real-time – adding a powerful layer of insight into the traditional quantitative & volumetric analysis currently used.



**Razieh Niazi**, former Ph.D. Candidate at York University in the Faculty of Science and Engineering, is the Founder and CTO at Kaypok Inc.

Kaypok Inc. is the first startup-company to come out of the Innovation York commercialization stream. Kaypok provides the next generation of unstructured text analytics solutions for enterprises. The technology analyzes data regardless of source, including public social media, proprietary internal data, customer surveys, email, blogs etc. Kaypok's high-performance algorithm processes the noisy, unstructured information extracting usable knowledge and insights about what people are saying, sentiments, and the root information elements driving analytics.

Originally disclosed to in 2011, Innovation York, together with MaRS Innovation, supported Razieh to further develop and commercialize the technology. Kaypok launched nationally at the iStrategy Digital Marketing Conference in Toronto on December 4, 2012. Since this launch, the company has successfully obtained seed investment from MaRS Innovation and the Ontario Centres of Excellence, has an office at the MCC and two offices downtown, has 8 employees and has research collaborations with researchers at York University and OCAD University, and is exploring potential future collaborations with the University of Toronto and Seneca College.



**PROBLEM:** Current elearning systems follow a linear format in the provision and acquisition of information. These systems are not effective for the acquisition of soft skills such as management and leadership.

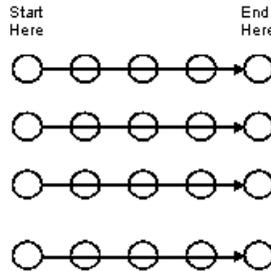
**SOLUTION:** NewMindSets technology is a combination of bite-sized learning nuggets and the methods for effectively engaging with that content through a blended learning format of live instruction, online collaboration tools, and interactive features.



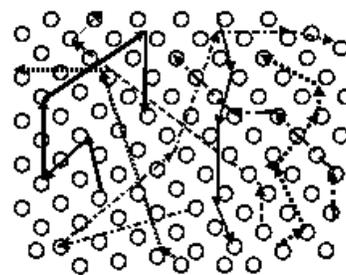
**Dr. Gareth Morgan**, a Distinguished Research Professor and **Jean Adams**, an Assistant Professor in the Schulich School of Business are the inventors of a second generation e-learning system that enables users to engage with world class management and leadership content in a non-linear manner. The value proposition of the technology, named NewMindsets, is its use of a “self-organizing” approach to system and content design that allows individual users to navigate their own customized learning path. The principles underlying this approach are captured in the following distinction between “first” and “second” generation e-learning systems.



**“First Generation” Design**  
The Traditional Course Model



**“Second Generation” Design**  
The Self-Organizing Ecology Model



Integrated into a number of courses within the Schulich School of Business, NewMindsets has provided leading-edge educational content and services to over 10,000 Schulich students at York University over the past decade. The inventors approached Innovation York to manage further commercialization of the technology, in partnership with MaRS Innovation, and in April 2013 ClevrU Corporation, a Waterloo-based technology company acquired the e-teaching pedagogy and related management and leadership content. Through this acquisition, ClevrU integrated NewMindsets’ intellectual property into its e-teaching platform, which was then used at York as a pilot.



ClevrU is a cloud-based e-teaching platform and education marketplace. The platform provides advanced tools that assist with interactive teaching and student/instructor collaboration. It uses a proprietary intelligence engine to adapt content to a user’s personal needs. The platform is multi-lingual, social, adaptive, and provides users with mobile access through iOS and Android applications. ClevrU focuses on delivering high-quality educational content from institutions and independent educators to international education markets.

**PROBLEM:** Tagging large digital photograph image sets, porting tagged images across different software operating platforms must be completed manually and as such, is time a very consuming activity.

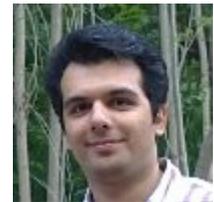
**SOLUTION:** Lookalike is a software package that allows users to quickly tag their digital photos based on the content of the scenes and identity of people who are present in the photos, and facilitates image search and retrieval functions that are essential in digital



**Dr. John Tsotsos**, Distinguished Research Professor in the Lassonde School of Engineering and **Dr. Ehsan Fazl-Ersi**, former Ph.D. student working in the Tsotsos lab, developed the technology, Lookalike that quickly analyzes and aggregates similar images based on facial and scene recognition.

In collaboration with MaRS Innovation and the researchers, Innovation York led a deal to strengthen Calgary-based start-up, Slyce's mobile image recognition application for retail e-

commerce. In addition to acquiring the technology, Slyce also hired Dr. Ehsan Fazl-Ersi, to lead the integration of the intellectual property into Slyce's Visual Search Platform as their new Chief Science Officer.



Slyce is a premium provider of visual search technology for retailers, brands and publishers. Their platform allows customers to take a picture of real-world products with their smartphone and then find direct or close-matching products from the retailer's catalogue, which they are able to purchase on the spot.



Identifying and classifying an object captured within a scene is difficult due to the effects of background clutter, lighting variations, and view point changes on the object's appearance. In the field of e-commerce,

the problem for mobile applications where the algorithm's speed and efficiency are the difference between losing a consumer or making a sale. Lookalike provides higher accuracy when quickly identifying retail items so that consumers can choose among similar items according to style, colour or pattern using a mobile device.

Since the completion of this deal, Slyce has successfully raised nearly \$11 million in venture capital, and has gone public on the TSX Venture Exchange.

# ACTIVITY OVERVIEW

| Activity   | FY2012/13     | FY2013/14     |
|--|---------------|---------------|
| <b>Research Agreements</b>   |               |               |
| Total Research Agreements  | 405           | 542           |
| Government Funding Agreements  | 234           | 202           |
| Industry Sponsored Agreements  | 23            | 19            |
| Confidentiality Agreements   | 17            | 27            |
| Material Transfer Agreements   | 20            | 31            |
| Other Agreements (e.g. collaboration, intellectual property, amendments) | 111           | 263           |
| Total Value of Research Agreements                                       | ~\$25,000,000 | ~\$17,000,000 |
| Controlled Goods Screened  | 3             | 6             |
| <b>Industry Liaison</b>  |               |               |
| Industry Interactions  | 80*           | 160           |
| Research Grants Supported  | NA            | 30            |
| Cash and In-Kind Contributions   | NA            | >\$5,000,000  |
| <b>Commercialization</b>   |               |               |
| Commercialization Grants Co-Authored                                     | 6             | 8             |
| Successful Commercialization Grants                                      | 5             | 6             |
| Value of Commercialization Grants  | \$310,000     | \$325,000     |
| Invention Disclosures  | 17            | 10            |
| Active Commercialization Projects  | 8             | 14            |
| Patent Applications Filed  | 6             | 7             |
| Startup Companies Formed   | 1             | 0             |
| Companies (York Obtained Equity)   | 1             | 2             |
| Total No. of Active Companies  | 1             | 3             |
| License/Options Executed   | 1             | 2             |
| Active License/Options   | 3             | 5             |
| <b>Entrepreneurship</b>  |               |               |
| Companies Using MCC Space  | 2             | 3             |
| Presentations Delivered  | 18            | 21            |

\*partial year (September 1, 2012 to April 30, 2013)

# THANK YOU TO OUR PARTNERS

A huge thank you to our partners, external and internal to the University, your support and collaboration is invaluable to the delivery of Innovation York services.

## MaRS Innovation

In 2011, York University became a member of MaRS Innovation, a Centre of Excellence for the Commercialization of Research.

MaRS Innovation (MI) commercializes some of the key research breakthroughs from 16 of Toronto's top universities, medical institutions, and research institutes. MI brings scientists and inventors from these member institutions together with industry partners and investors who are looking for high-potential opportunities. Together MI and Innovation York have successfully collaborated on three commercialization projects; as well, MI has invested in start-up company Kaypok and provided review services on more than 34 invention disclosures.

In 2011, York University also became a member of ventureLAB (VL), the Regional Innovation Centre for the York Region. VL applies a unique combination of mentoring, partnering, and



connecting to help pioneering entrepreneurs turn great ideas into globally competitive businesses with successful start-up business training. Innovation York and VL work together to support faculty and student entrepreneurs as they incorporate and grow startup companies. In addition, we work together to create partnerships between academic researchers and VL clients, in order to create innovative research partnerships and develop intellectual assets that will have a positive commercial, economic, and social impact.



In 2012, Innovation York and IP Osgoode entered into a strategic partnership in order to provide further legal and business supports to York University-affiliated small-medium enterprises. IP

Osgoode is the Intellectual Property Law and

Technology Program at Osgoode Hall Law School. The Innovation Clinic is run out of IP Osgoode and is a needs-based innovation-to-market legal clinic operated in collaboration with Innovation York and Torys LLP that provides legal review relating to intellectual property and patenting issues to small-medium enterprises. This is a valuable service for entrepreneurs who do not yet have the capital to hire a legal firm to perform these services.

In order to effectively facilitate the agreement process, patent applications, and create start-up companies, Innovation York requires the support and collaboration of internal units within the University. Innovation York



works closely with the **Office of the Counsel, Research Accounting, and Risk Management and Insurance** in order to accomplish these activities and successfully deliver our services.

# VISION AND STRATEGIC GOALS

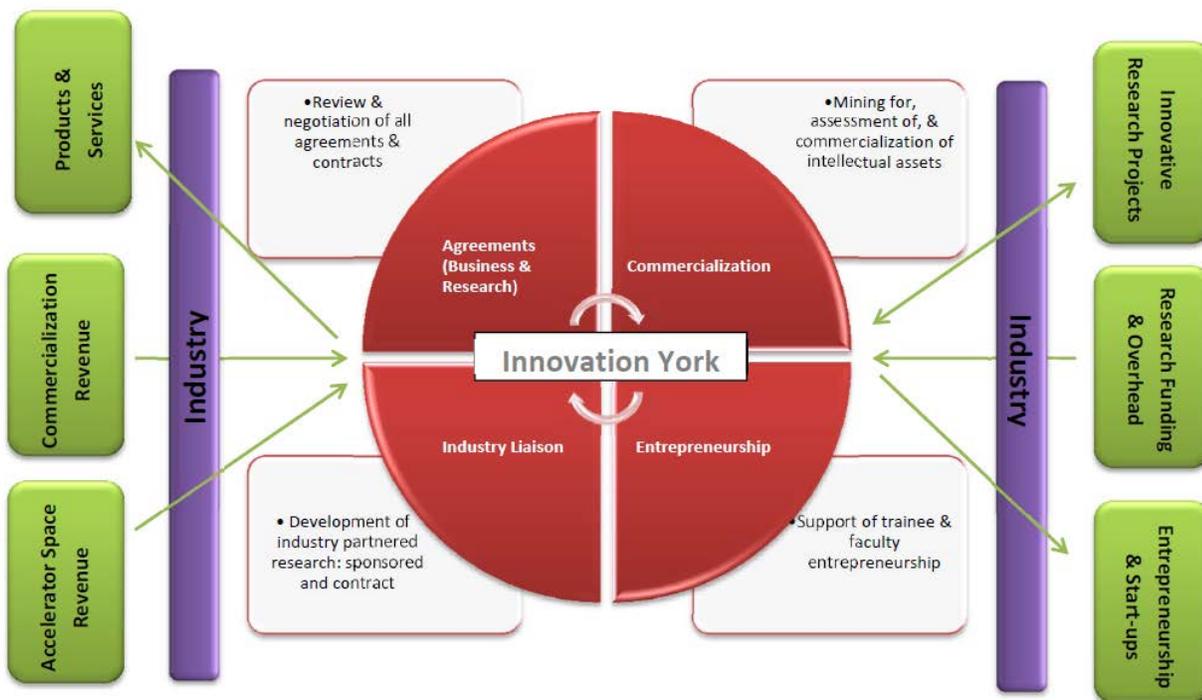
## VISION

Innovation York is committed to facilitating meaningful academic-industry collaborations and partnerships that adhere to the university policies on academic freedom and external engagement, in order to stimulate innovative research and ensure that innovations developed at York have the widest economic and social impact possible.

## STRATEGIC GOALS

1. Enhance the brand of York as a research intensive university, with a mandate for industry partnerships.
2. Increase the number of academic-industry partnerships and the amount of industry research funding at York.
3. Increase the number of commercialization activities and successful research outcomes at York.
4. Generate revenue from overhead and commercialization revenue.
5. Facilitate York's mandate to support the economic growth of York region.

## STRATEGIC MODEL



## WHO WE ARE

### **Sarah Howe, MBA, RTTP, Director, Innovation York**



Sarah joined York University in May 2010 as the Associate Director, Research Agreements and Intellectual Property and became the Director, Innovation York in September, 2012. Prior to joining York, Sarah worked as a Contracts Coordinator and then a Business Development Officer at The Hospital for Sick Children. Sarah is responsible the strategic direction and day to day operation of Innovation York, as well as supporting all four service streams. Sarah is the former Chair of the Canadian Licensing Survey and Associate Vice-President, Canada for the Association of University Technology Managers.



### **Cheryl Giblon, P.Eng., M.B.A., Ph.D., Industry Liaison Manager**

Cheryl joined York University in September 2012, as Industry Liaison Manager, where she is responsible for advancing industry-academic research collaborations and partnerships. Dr. Giblon has over 25 years of experience in global technology sales and marketing, engineering, and operations management at several start-up and multinational technology companies, including Compaq Canada (now HP), Borland Software, ATI Technologies Inc., Stetron International, eNation Corporation, Allied Signal Aerospace (now Honeywell) and Bell Sygma, Inc..



### **Hassan Jaferi, Commercialization Manager**

Hassan joined York University in January 2012. Employed through MaRS Innovation, Hassan works as the Commercialization Manager for York and Sunnybrook Research Institute. Prior to joining York, Hassan worked as a Commercial Development Analyst for PARTEQ Innovations at Queen's University and a Business Development and Operations Manager for a Queen's startup company, SPARQ Systems Inc. Hassan is responsible for intellectual asset assessment, as well as project management for the commercialization of intellectual assets taken into the Innovation York portfolio.



### **Janet Newton, Research Agreements Officer**

Janet joined York University in August 2005 as the Senior Buyer in Procurement Services and became the Research Agreements Office in October, 2008. Prior to joining York, Janet worked as a Buyer at Trent University. Janet is responsible for the review, negotiation, and finalization of complex funding grants, agreements, and contracts, as well as facilitating the controlled goods screening process.



### **Andrea Thomas, Research Awards Coordinator**

Andrea joined York University in November 2010. Prior to joining York, Andrea worked as a Administrative Assistant at The Hospital for Sick Children. Andrea is responsible for the review, negotiation, and finalization of funding grants and agreements; she manages the notice of awards process and Innovation York's intellectual asset administration.