I  Introduction

Recap of Mandate Statement

The University of Toronto's Knowledge Media Design Institute is an administrative unit of the Faculty of Information at the University of Toronto. Founded in 1995, KMDI is a leader in interdisciplinary research and teaching at UofT. With over 150 UofT faculty members, associates and graduate students from sciences, engineering, social sciences, humanities, and the arts the Institute’s research in knowledge media design s helping to shape the products, processes and practices of the 21st century. KMDI’s goal is to stimulate collaborative projects of national and international significance through the development of innovative research partnerships with other universities, the private sector, non-profit organizations and government agencies.

Director’s Statement/Executive Summary

The University of Toronto's Knowledge Media Design Institute's vision is to be a leader in bold, ambitious and innovative interdisciplinary teaching and research in the field of knowledge media design. The Institute builds on a number of intellectual traditions at the University of Toronto: from Harold Innis in the 1940s and Marshall McLuhan beginning in the 1950s to the pioneering work in human factors and research in graphics and human-computer interaction (HCI). Today, a multidisciplinary unit of the faculty of Information, KMDI is identified as a leader in tri-campus, cross-divisional and trans-disciplinary research and teaching at the U of T. Its 'brand' is established, recognized, and has a strong reputation. New faculty and graduate students report being attracted to the University of Toronto because of the Knowledge Media Design Institute. KMDI will continue to be guided by the four themes which frame the research and teaching programs in the Institute: a) technologies for knowledge media, b) knowledge media for learning, and c) knowledge media, culture and society, and d) human-centred design. The Institute builds on these existing strengths by highlighting two areas of specialization in which it has acknowledged leadership.

• Collaboration: people, practices and technology.
• Public policy and citizen engagement in the Knowledge Society.

II  Previous Year

Activities

-may include conferences, colloquia, seminars, participation at other events/workshops/forums, student support, external liaison, etc.

A. Research Presentations & Meetings

KMDI presentations to Quanta: Quanta Computer is the largest notebook computer OEM/ODM company in the world and has extended its businesses into enterprise network systems, home entertainment, mobile communication, automotive electronics and digital home markets. They are interested in research that combines social and engineering questions around computing. Dr. Ted Chang, Chief Technical Officer and Mr. Terence Huang, Manager, Advanced Research, Planning and Program Office were visiting the University of Toronto, on the invitation of the V.P. Research, to discuss the potential research partnership between Quanta and UofT. On Quanta’s request, Costas Plataniotis
presented KMDI’s history, current projects and research interests. On 6 September 2011, Joseph Ferenbok met with Mr. Terence Huang to further discuss potential collaborations and models for industry-academic research.

**Design Jam (KMDI, ThingTank, ICCIT, and Samsung):** On 9 September 2011, KMDI in collaboration with ThingTank (formerly DDiMIT) held a Design Jam sponsored by Samsung. Knowledge Media Design Collaborative Program (KMD CP) students and members of the KMDI and the ThingTank community formed teams and tackled a User Experience (UX) design challenge. The challenge, “What does a family games night in a networked environment look like?”, focused on how groups of people, who have been traditionally co-located, like families, collaborative teams, etc., can interact mediated by increasingly present and networked information communication technologies. Assisted by two mentors, the four teams brainstormed, created prototypes and presented their ideas at the end of the day. Samsung provided equipment (a flat screen television, tablets and smart-phones) for the teams to document and present their ideas. Each team created a blog to document their process. Photos taken with the Samsung devices were included in the blog posts. Feedback from participants was very positive and there is interest in having more Design Jams this year.

**B. KMDI Research Round Tables:**

**30 June 2011:** In terms of education, recurring themes in this discussion were how to encourage students who are gaining depth to also gain breadth, educating across boundaries and how to get “productive collisions” between people of different disciplines. In terms of crossover between disciplines, issues touched upon were the difficulty of conveying necessary information to people who are not experts in that field and the possibility of treating this as a general problem and finding a solution based on general principles.

**27 September 2011:** This roundtable discussed potential research topics for the 2011 ORF grant. In terms of specific project collaborations, knowledge translation, visualizing data and “collaborative spaces” were discussed. The collaborative spaces should be independent of discipline and also be useful outside of academia.

**C. KMDI Student Round Table:**

**26 May 2011:** Kostas Plataniotis (KMDI Director), Joseph Ferenbok (CP Director) and Ana Popa (CP administrator) met with students to discuss their needs and the future of the KMD CP community. The students unanimously requested more events, workshops and hands-on design challenges.

**D. Site Visits**


**E. Other Activities**

**Industry Canada’s 2010 online consultation on the Digital Economy strategy:** At the University of Toronto (U of T), a process to encourage participation to author this submission was co-sponsored by The Faculty of Information, Knowledge Media Design Institute and Identity, Privacy and Security Institute. Through communication with our networks and affiliates, a call for participation was launched, and we recruited scholars and experts in information and communication technology (ICT) policy, broadly conceived and also open to anyone with an active interest in this field. A key requirement from all participants was the willingness to collaborate on crafting this written submission. To achieve this goal we first established a wiki environment where approximately 50 people joined in the conversation. Second, an in-person roundtable was held for 33 participants at U of T on June 14th, 2010. Individuals participating in the wiki and roundtable event came from a range of backgrounds; while primarily an academic group of professors, students and staff, participants from industry and non-profit organizations also attended and joined in. The objective for the wiki and the roundtable event was to collaboratively author this submission as a consensus document, where the prevailing opinions of a broad array of the participants could be captured.
KMDI researchers John Danahy, Nick Woolridge, Matt Ratto, Gerald Penn, Kostas Plataniotis, and KMDI student Siavash Kazemian are in discussions with a number of companies pursuing opportunities for research collaboration.

Collaboration with “Kitchen Budapest”: KMDI is collaborating with Kitchen Budapest (http://www.kitchenbudapest.hu/) on a project that will build and analyze an archive of narratives from participants and members at various media labs around the world. This project is a result of the ongoing collaboration and relationship building of Nina Czegledy, KMDI Senior Fellow, and her efforts in raising the profile of KMDI in the international media lab community.

KMDI members: Nick Woolridge and Nina Czegledy are working to develop an exhibition and workshop based on the recent work done with Grant's Atlas drawings. The theme currently proposed is prosthetics.

KMDI member Nina Czegledy’s continued promotional efforts, collaboration with Subtle Technologies (http://www.subtletechnologies.com), for a yearly conference on the intersection of art and science is underway. The current proposed focus is a 3D workshop on network exploration.

The Institute continued to record and archived the Department of Computer Science (DCS) Distinguished Lecture Series 2010-2011, namely:

- Social Networks Offline (Prof. Nicholas A. Christakis of Harvard University), Tuesday, January 18, 2011.
- Computational Models of Common-Sense Theories (Prof Josh Tenenbaum of MIT), Tuesday, February 15, 2011.

The lecture series will be part of our online lectures available on the KMDI website.

Programs – if the institute offers courses or programs, give details on enrolment, year-over-year changes.

The Collaborative Program in Knowledge Media Design (KMD-CP) aims to provide a specialization for graduate students from a variety of academic backgrounds to engage in the design, prototyping, evaluation, and use of media intended to support and enhance the ability of individuals and groups to think, communicate, learn, and create knowledge.

This year KMD-CP made 13 offers to students, and to date 12 have accepted (up 2 students from the previous year). With the planned restructuring of the admissions process, we already have several new students interested in applying this term that have taken KMD classes but have not yet enrolled in the program.

During the summer, KMD-CP was able to offer KMD 2004 (which had not been offered in four years). The class had 19 students registered and one official auditor. The course took an unconventional look at disruptive technologies by challenging students to think about how the MS Kinect could be hacked to augment collaborative spaces. The class was held at the ThingTank and produced three projects that spoke to collaborative art production—challenging our understandings of collaborative space and blurring the lines between audiences and creators.

This summer KMD-CP also ran an individual reading course to accommodate an iSchool Master’s student. KMD 3000 under the supervision of Joseph Ferenbok looks at the changing landscape of books and e-readers in education.

KMD-CP also made a significant push this summer to meet with academic staff from all collaborative units, reestablish the Program Committee with full representation, and coordinate orientation presentation through both the units and SGS, and establish some proposed changes to the program.

KMD-CP has also restructured KMD1001 from previous years. This year’s class has a new lecture / design project structure which not only introduces students to members of the KMDI community from across our collaborating units, but also centers are a design challenge. Knowledge Media Design Collaborative Program graduate students in KMD1001 have been challenged to answer: How can art and media be used in the No.9 Art Train to enhance the user experience and promote positive environmental
In June of 2012, a GoTrain car wrapped in by No.9 will become art in motion. The installation is planned to travel all 7 of GoTrain's routes for a period of 6 months. No.9's Art Train is art in motion, is planned to be a blend of art and technology that improves the user experience (UX) and promotes positive environmental change.

Finally, KMD-CP is also in the process of signing two new collaborative units. Both units have agreed to sign onto KMDI's Memorandum of Agreement and KMD-CP is coordinating the process with SGS.

Grant Applications – completed (successful and unsuccessful), specific grant amounts, focus of research

KMDI's current research strategy targets three main domain topics in the area of knowledge media: health and wellness, climate change, and urbanization. Research projects in these three areas are informed by a cross-cutting theme that emphasizes the movement of digital artefacts from screen-based formed interactions to ubiquitous types of interactions. To convergence between new technologies and emerging services opens new spaces for innovations in knowledge media.

- **FEDEV ARC Grant** – “Usability and design of ecobee accessory products for residential and commercial energy use”, Industry Applicant: Ecobee (www.ecobee.com): Funded ($50,000).

- **FEDEV ARC Grant** – “Communicating risk information to oncology patients: a novel, media based approach”, Industry Applicant: Cooler Solutions Inc. (www.coolersolutionsinc.com); Funded ($50,000).

- **KMDI-Supported ORF Application** - "Integrated Decision-Making Support for Sustainable Communities", (to be submitted Ontario Research Fund for Research Excellence Funding, Round 5) – (un-successful), KMDI Member: Steve Easterbrooke (CS) – Principal Investigator and Theme Leader: Decision Support, KMDI Members: Andrew Clement and Kostas Plataniotis (Director): Theme leaders for “Privacy and Security”, KMDI Member: Gerald Penn, Theme leader for “Data Visualization”. Numerous other KMDI members participate as researchers. This proposal is collaboration between the Cities Centre, The Business Intelligence Network (BIN) and the Knowledge Media Design Institute (KMDI) at the University of Toronto. The goal of this initiative is to establish Ontario as a world leader in the data analytics technologies needed to drive intelligent planning and decision-making in the areas of Urban Design and Energy Management. The research will produce the tools needed to rapidly combine information from large, diverse datasets, and the models and visualizations needed to bring citizens and policy-makers together to re-invent cities as the basis for a livable, resilient, carbon-neutral society. The proposed program integrates the research of a talented team of world class researchers, and builds on the advantages Ontario enjoys as an early adopter of smart grid technologies and open data initiatives. (Note: The consortium submitted a Notice of Intend (NoI) on Wednesday, September 28, 2011. Application to be submitted in 2012).

- **SSHRC Insight Development Grant, Funded** ($33, 604), Principal Investigator, Gerald Penn, KMDI Chief Scientist (2009-2010). The purpose of this project is to put the study of writing systems onto a sound scholarly footing by investigating the definition of writing itself. What makes symbol system writing, and how do we test whether a system is writing or not? At this point in time no statistical test can be conclusively evaluated because almost nothing is known statistically about symbol systems that are not writing. The research programme for this project will (1) collect a corpus of naturally occurring but unequivocally non-linguistic symbol systems, (2) statistically profile them, using generally accepted methods from corpus linguistics, and (3) use this corpus, as well as corpora over a range of legitimate writing systems not only to formulate but to empirically validate proposals for answering the question, 'Is this writing?'

- **SSHRC Partnership Development Grant**, Funded ($200,000), And “Digital Economy Trading Zones”: interactional expertise and the role of public, private, and academic values", ( Funded Aug. 2011) KMDI member: Matt Ratto (iSchool) Principle Investigator. Co-investigators include KMDI members: Megan Boler (OISE) and Sara Grimes (iSchool). Other co-investigators are Mary-Lou Lobinger (Architecture), Jason Nolan (Ryerson), Kate Hartman and Emma Westcotte (OCAD U). Private SME partners are Cooler Solutions, Hungry Monster, Normative Design, and Play Dynamics. Non-profit partners are the Toronto International Film Festival, Interaccess, and Hacklab.TO. This project builds on the previous OMDC-funded project, Designing Digital Media
for the Internet of Things. In this grant we propose to better situate and study the partnerships that were established within DiDiMIT and to study the process by which public-private-academic collaboration can be successful. In particular we will address the following meta-level questions: What are the necessary and important characteristics that allow a digital economy 'trading zone' to flourish? What modes of 'interactional expertise' are necessary to develop value within such a space? How can the various goals of different, cross-sector partners be supported and maintained within such a space? Our focus is on a developing aspect of digital media, namely, the increasing materialization of digital media and the related interweaving of physical and virtual modes of engagement. This materialization has ramifications for the academic study of digital media, as well as its role in both cultural expression and commercial interests. We therefore bring together working groups in order to develop concrete projects that provide value to each of these groups. The three groups will include members from academic institutions, cultural organizations, and private SMEs, and will be organized around the following inter-related themes; Space, Play, and the Self. Over the three years of the grant, these working groups will carry out research on their particular theme and construct a concrete 'reference project' related to it. The combined 'making' and 'thinking' associated with these goals will be facilitated by a 'critical making' approach developed by the P.I. Expected impacts include potentially novel digitally-enabled objects as well as greater insight into knowledge-sharing and transfer between academics and the larger public.

- **CFI-ORF project** – “Mobile and Pervasive Computing Centre – Inclusive Design Institute”, ($1,400,000), (Funded by CFI-ORF) KMDI members: Matt Ratto (iSchool) Principle Investigator and Director; KMDI members, Sara Grimes (iSchool) and Rhonda McEwen (UTM CCIT), Associate Directors. The Mobile and Pervasive Computing cluster is part of the larger Inclusive Design Institute (IDI) research effort. This is one of the four main research clusters of the IDI funded by the large Canadian Foundation for Innovation (CFI) New Initiatives Fund and associated ORF-RE. This effort is interdisciplinary and cross-institution, involving researchers from eight collaborating partner institutions across several departments and fields. At the heart of this research are the complimentary goals of providing (a) the ability to access services and information in a variety of settings, activities and environments and (b) the ability to transform these environments and tools to reduce disability brought on by a mismatch with the needs of the individual. For the MPCC, these two goals entail theoretical and applied research into four related areas: Context-aware Services and Cognition, Smart Interfaces, Participatory Material Culture, and Adaptive Games and Inclusive Play. There are many communities that will be involved with (in a participatory design framework) and benefit from this research. These include, first and foremost, communities of people who experience forms of disability in certain environments or with certain tools. However, just as many innovations help people who experience specific disabilities as well as unexpected others (the so-called 'curb-cut' phenomenon,) we anticipate the technology and insights developed here will similarly benefit all users of mobile and pervasive computing devices.

**Collaborations**


**Personnel**

**Departures:**
Adriana Ieraci, Executive Director (2009-2010)
Gerald Penn, Chief Scientist (2009-2010)

**Additions:**
Ana Popa, Collaborative Program Administrator (November 2010)
Joseph Ferenbok, Collaborative Program Director (March 2011)
Zoe Jaremus, KMDI Administrative Assistant (August 2011)
III Objectives/Plans for upcoming year

Key Priorities

1. Expand and strengthen the Institute’s collaborative graduate program:
   a. Increase number of student applications over 3 years to 20, 25 and 30 offers respectively;
   b. Increase the number of course offerings developed in collaboration with participating units (e.g. Offer a joint class designed with the Faculty of Medicine);
2. Deepen and extend the reach the Institute’s research program. Build our research community; join external partners in research projects; and provide more opportunities for collaboration in research.
3. Continue support initiatives such as “ThingTank” and facilitate the commercialization of technologies through effective technology transfers and industrial partnerships.
4. Restructure the KMD-CP courses and requirements to be more inclusive for member units;
5. Strengthen ties with existing units and broaden the Collaborative Program by adding at least one new unit each year over the next three years;
6. Develop a KMD-CP outreach program to other institutions involved in Knowledge Media Design
7. Extend and strengthen the KMD community by hosting events such as Design Jams and our upcoming apps challenge (in partnership with Samsung and The Institute of Communication, Culture and Information Technology (ICCIT) at the University of Toronto Mississauga).
8. Start work on a strategic plan for the next five years.
9. Bring forward to the Faculty Council recommendations to build further linkages with other University units, and develop a series of strategic interdisciplinary initiatives.

Ongoing Programming

KMDI is currently in the process of renewing its research programs and strategy to allow its researchers to engage industrial partners in active collaboration and explore their application of their research across the humanities, sciences and technology.

Budget statements 2010-11 actuals and 2011-12 projected

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* Salary recoveries of 30,000 were added to the 2010/2011 budget.

IV Plans for 2012 and beyond

1. Strengthen the Institute’s position as an authoritative voice and leader in collaborative, interdisciplinary and interdivisional research and teaching at the UofT.
2. Work with the Faculty of Information towards the establishment of an EDU-B for KMDI.
3. Expand carefully through partnerships. Several initiatives will be pursued including a novel joint undergraduate teaching program with UTM/CCIT.
4. Pursue a series of shared faculty appointments with other academic units to support the Institute’s graduate collaborative program.
5. Work towards a sustainable model of funding for the Institute’s administrative functions.
6. Work towards a sustainable funding model for the KMD-CP.