Knowledge Media Design Institute (KMDI)
A Multidisciplinary Unit of the
University of Toronto Faculty of Information

Report to Faculty Council

November 5, 2010

Report on KMDI Collaborative Graduate Program (KMD CP)

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Since 2002, KMDI has delivered a graduate collaborative M.Sc. and Ph.D. program. As of October 28, 2010, there are 87 current students (n=42) and graduates (n=45). We admitted 13 new KMD CP students in June 2010, six of whom are FI students. The KMD CP has nine partnering units - the Departments of Art/Visual Studies, Computer Science, Curriculum Teaching and Learning (OISE/UT), Mechanical and Industrial Engineering, Medical Science, Sociology, and Theory and Policy Studies (OISE/UT); as well as the Faculties of Information (the iSchool) and Architecture Landscape and Design. The KMD CP Program Committee consists of representatives of our collaborating units.

1. 2010-2011 Student Enrollments in KMD CP

- Changes to our student enrollments since our September 2010 report are:
  - Two Masters student from FI are graduating in November 2010
  - Four PhD students – two from CTL, one from CS, and one from MIE have completed their dissertations and are graduating in November 2010

- 44 students are enrolled in the KMD CP (academic year 2010-11):
  Masters students: 19 (ALD-3, CTL-6, FI-8, MIE-1, Visual Studies-1)
  PhD students: 23 (CS-1, CTL-10, FI-7, MIE-3, SOC-2)

- 45 students have graduated from the KMD CP since it began in 2002

- The deadline for KMD CP 2011-2012 applications will be May 31, 2011
2. Expanded & Revised KMD Program 2010-11

Our 2010-2011 courses include:

**Fall courses 2010 (Sept-Dec):**

- **KMD1001** KMD: Fundamental Concepts, Fall 2010
  18 students enrolled (10 are KMD CP students; 8 are FI students)

- **KMD2002** Technologies for Knowledge Media, Fall 2010
  15 students enrolled (3 are KMD CP students; 9 are FI students)

**Winter/Spring courses 2011 (Jan-Apr)**

- **KMD1002** Pro-seminar in KMD, Winter/Spring 2011
- **INF 2169/ KMD2001** Human-centred Design, Spring 2011
- **CTL 1926/ KMD2003** Knowledge Media & Learning, Spring 2011

KMD1001H F: Knowledge Media Design: Fundamental Concepts
Peter Pennefather, (T.A. Colin Furness)
Fall term, Sept-Dec 2010, Thursdays 3-6 pm
Public dialogue sessions in Bahen Centre, Room BA 1230
Private student workshops in Bahen Centre, Room BA 7231

The theme for KMD: Fundamental Concepts this year is KMD in support of presentation of information within systems of professional knowledge with a particular focus on entry-to-practice education of health professionals. This theme encompasses a critical examination of how fundamental knowledge used within healthcare professions used to deliver core competencies are presented how KMD principles are or could be applied to support process innovation within those programs. This focus illuminates evolving concepts of communities of practice, knowledge representation, and knowledge mobilization. It also serves as a specific context for exploring KMD methodologies based on principles underlying sense-making, design process, and digital networks and data architectures.

*Note:* Information on the KMD1001 Public lecture series is available at the following address: [http://kmd1001public.eventbrite.com/](http://kmd1001public.eventbrite.com/). Everyone is welcome. No RSVP necessary.

KMD 1002H S: Pro-seminar in Knowledge Media Design
John Danahy (Instructor-of-record), Instructor TBD
Winter/Spring term, Jan-Apr 2011, Tuesdays 6-8pm
Credit course (credit/non-credit). Open to KMD CP Master’s and PhD students, and non-KMD CP students with special permission. Bahen Centre, Room BA 7231

The topic of the Pro-seminar in KMD course this year is “Values in Design.” This course will explore the theme of social values such as autonomy, freedom, dignity, health and fairness in design. An array of values is pertinent to the disciplinary traditions of KMDI collaborative units. To explore these values, this course will involve a variety of learning activities including: values in scholarly design practice; field
KMD 2001H / INF 2169H - Human-centred Design
Andrew Clement
Winter/Spring term, Jan-Apr 2011, Mondays 10-12am

An approach to design grounded in understanding the real-world practices of users and communities. The course draws most heavily from the 'participatory design' school, in which the prospective users play a vital collaborative role throughout all stages of the development process. Students work in teams with a 'real' user group developing a prototype knowledge media application. The purpose of this course is to provide students with both theoretical foundations and practical experience in developing information systems that are driven by the needs and active participation of users.

KMD 2002H - Technologies for Knowledge Media
Kate Sellen, Mark Chignell (Instructor-of-record)
Fall term, Sept-Dec 2010, Wednesdays 1-4pm

The goal in this course is to gain experience in different approaches and tools for designing knowledge media. The focus is on learning different techniques and tools for requirements analysis, prototyping, and evaluation. The course covers understanding the context in which knowledge media is introduced, understanding the team, group or work setting for designing collaborative knowledge media. The group also is exploring different techniques for understanding and designing for the individual who uses or engages with knowledge media. Techniques and tools are drawn from a range of design perspectives including traditional user centered design, participatory design, engineering, and industrial design. The appropriateness of each technique and tool for different design problems and settings is discussed, as well as the development of new techniques and tools for new design challenges. The course is a combination of hands on use of techniques and tools, and includes case studies in communication, collaboration, and information access. There are site visits to labs that specialize in particularly challenging knowledge media design problems such as the design of assistive technologies and design and evaluation in medical settings.

KMD 2003H / CLT 1926H S - Knowledge Media & Learning
Jim Slotta (instructor-of-record)
Winter/Spring term, Jan-Apr 2011

This class works as a knowledge community to investigate various themes relating to particular knowledge media. The course investigates the implications for learning and instruction in the classroom, on the playground, in the museum, online, or anywhere else that learning may happen. It attempts to make connections to the theoretical foundations from the learning sciences and other disciplines - What is known about how people learn? How can technology expedite learning or knowledge construction?
3. **KMD CP Committees 2010-11**

Three KMD CP Committees are actively planning activities and events for the KMD CP community:

- The Information Committee is continuing to design and develop The Hub@KMDI (http://hub.kmdi.utoronto.ca/). The Hub is for students of the KMD Collaborative Program. This site features personal profiles, KMD course listings, project galleries, forums and links to collaborating units of the Knowledge Media Design Institute.

- The Industry/Professional Link Committee is planning an Industry Roundtable, KMDI Professional Development Event, modeled after two very successful Roundtables last spring. The event is being planned for Wednesday, November 24 – please watch for promotion.

- The Social Committee is organizing fun, social events for KMD CP student gatherings.

4. **Faculty of Information Administrative Support**

A special thanks to administrative staff at the iSchool – Lisa Betel, Carol Ng, and Christine Chan - for all of their help throughout the Summer and Fall with students files, Admission/Completion letters, course set up, student enrollment, course grades, and re-design of the KMD CP 2011-2012 application. And our appreciation to KMD CP student Marie-Eve Bélanger, graduating in November, for her invaluable assistance with prospective KMD CP student inquiries.
Report on KMDI Current Research Activities

Designing Digital Media for the Internet of Things (DDiMIT)

In the fall of 2009 KMDI worked with Dr. Matt Ratto of the Faculty of Information on a project entitled Designing Digital Media for the Internet of Things (DDiMIT). The consortium aims to build capacity in the Internet of Things for Ontario companies, academic institutions, and community organizations.

Funding
DDiMIT is currently funded through an Ontario Media Development Corporation (OMDC) Entertainment and Creative Clusters Partnerships Fund program
- Approximately $127,500 from OMDC
- Approximately $150,000 in-kind labor support from consortium members
- Funding currently supports a part-time coordinator (Marie-Eve Belanger, FI) hired in May, and covers the lease and equipment costs of the new DDiMIT physical space
- Funded through OMDC until December 2011

Physical Space
The goal of the DDiMIT consortium is to leverage our joint knowledge and skills in order to support each other in doing novel research, creating innovative products and services, and fostering creative and engaging work in the Internet of Things. To achieve this goal, DDiMIT will provide to consortium members a platform consisting of a physical space and tools for hands-on workshops, collaborations, and showcase events.
- We have taken possession of a 2000 Sq. Ft space, situated at 374 Bathurst (near Dundas Street West, across from Toronto Western)
- Leased until December 2011, potential expansion of the lease in the works
- Space is currently being renovated and will officially open to consortium members in December 2010 or January 2011

Workshops and Events
The main methods for achieving the goals of the DDiMIT lab are the establishment of workshops and drop-in sessions focused on hands-on skills and shared experimentation.
- DDiMIT has successfully hosted 3 workshops so far
- Latest workshop took place in Matt Ratto’s Critical Making Lab
  - Hosted by Robert Ree (MI, Faculty of Information)
  - Workshop introduced participants with the current processes, systems and technologies surrounding 3d printing
  - Participants worked with multiple 3D modeling software and successfully created small artifacts that were subsequently printed in the Critical Making Lab
- Next workshop (November 25, 2010) will be hosted by Torch Innovations at OCAD, and will explore the topic of Augmented Reality
- Currently looking into diversifying the types of events, workshops and projects hosted by DDiMIT

Broadening of scope and membership base
The DDiMIT workshops generated a lot of interest in the digital media community. Consequently, we added several members to the consortium in the last few months, broadening our scope and expertise
pool. Key members from the maker/hacker communities (e.g., InterAccess, hacklab.to), as well as community organizations (e.g., TIFF) provide valuable knowledge around the Internet of Things.

**Partners in DDiMIT include (* indicates newest additions):**
- Knowledge Media Design Institute, Faculty of Information, University of Toronto
- The University of Western Ontario, Laboratory for Humanistic Fabrication
- Interactive Ontario
- Ontario College of Art and Design (OCAD)
- Brock University
- Three S Productions - Home of BunnyEars.tv
- Aesthetec Studio Inc.
- Marblemedia Interactive Inc.
- Torch Partnership Inc.
- Emerging Methods Inc.
- *Cooler Solutions Inc.
- *DigitalLunch Inc.
- *HackLab.TO
- *InterAccess Electronic Media Arts Centre
- *Normative Design Inc.
- *Ross + Doell Inc.
- *Toronto International Film Festival
- *Panda Rose Consulting Studios Inc.
- *Fair Trade Jewellery Co.

**KMDI-Supported ORF - "Integrated Decision-Making Support for Sustainable Communities”**
*Ontario Research Fund for Research Excellence Funding, Round 5 – Submitted October 28, 2010.*

- KMDI Member Steve Easterbrooke (CS) - PI and Decision Support
- KMDI Members Andrew Clement and Kostas Plataniotis (Director) – Theme leaders for “Privacy and Security”
- KMDI Member Gerald Penn (CS and KMDI Chief Scientist) - Theme leader for “Data Visualization”

KMDI member participants: John Danahy, Nadia Caidi, Matt Ratto, Kelly Lyons.

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.

The project includes a large database housing smart meter data and a multimedia immersive environment for collaborative decision-making. Multiple large-company partners are showing interest and support for the project including IBM.