

The Emergence of the Regional Human Resources Strategy

Final Report on the Social Innovation and Leadership for Complex Challenges Partnership Project



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North Superior
Workforce Planning Board

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Table of Contents

Executive Summary.....	5
The Emergence of the Regional Human Resources Strategy Social Innovation and Leadership for Complex Challenges	7
Partnership Project.....	7
Background.....	7
Complexity Theory	8
<i>Interdependent connections and emergence:</i>	8
<i>Complex Adaptive Systems Theory:</i>	9
<i>Adaptive Cycle:</i>	9
<i>Panarchy:</i>	11
Current Project.....	11
<i>Social Innovation and Leadership in Complexity</i>	11
<i>HR Strategy Working Group</i>	13
<i>Into the Future</i>	17
Appendices	21
Appendix 1: Report on NSWPB Retreat November, 2014.....	21
Appendix 2: Message of recruitment from NSWPB for the course	25
Appendix 3: Course outline for Social Innovation and Leadership in Complexity	26
Appendix 4: Invitation to Regional HR Strategy focus group sent May 20, 2014	30
Appendix 5: Agenda for June 9 meeting.....	32
Appendix 6: Matching Labour Force and Demand document	33
Appendix 7: First draft terms of reference for the focus group	34
Appendix 8: Agenda and Minutes from June 23 meeting	40
Appendix 9: Agenda and minutes for meeting #3: July 28, 2014	43
Appendix 10: Agenda and minutes for meeting #4: August 13, 2014	48
Appendix 11: HR Strategy Project Timeline	52
Appendix 12: HR Strategy living Terms of Reference as of February 25, 2015.....	55
Appendix 13: Project promotion document	62

Executive Summary

The North Superior Workforce Planning Board, like other such boards in Ontario, is tasked with better connecting the supply of skills in the labour force with employer demand, while simultaneously addressing obstacles to employment. In a 2012-2013 partnership project of the NSWPB, the need to develop a local strategy to better connect labour supply and demand was highlighted. Through a retreat and presentation to the board, it became clear that in order to bridge this gap between labour supply and demand it was necessary to first get a more comprehensive image of the labour supply itself. Existing statistics and information, which emphasize group level summaries of workers in various sectors and demographic percentages, is not always available and fails to capture the internal movement, or “churn” of the labour supply, as people change positions. Complexity theory was identified as a lens that may prove valuable in conceptualizing the dynamics of the labour supply and the broader labour supply-demand system. This report summarizes the activities of the 2013-2014 partnership project of the NSWPB entitled, “Social Innovation & Leadership for Complex Challenges.”

Complexity theory, or complexity science as some are beginning to refer to it, is the *study of phenomena which emerge from a collection of interacting objects*. In the case of the workforce, these objects are people, and they interact with each other by exchanging information, values, and resources through formal and informal channels. Living systems such as the workforce are complex adaptive systems, as they display the capacity to adapt and learn. All complex adaptive systems undergo similar patterns of change over time. Specifically, they follow a 4-phase cycle of rapid growth, stable conservation, release, and reorganization. These systems are also nested within one another and affect each other in various ways.

In the first phase of this project, the NSWPB sponsored the first two offerings of the Social Innovation and Leadership in Complexity course held through Continuing Education at Lakehead University. This course was offered to senior management of non-profit organizations in all sectors and attracted 26 and 30 students respectively. This course advances understanding of complexity theory and its implications for leadership and innovation. Two NSWPB staff members and 3 board members completed the course and introduced examples relating to the workforce into class discussion. Through participation in both of these courses and by welcoming classmates to the NSWPB office to do homework sessions together, significant increases were made in NSWPB’s ability to conceptualize the workforce as a complex adaptive system and use the language of complexity science in exploring the implications of this conceptualization. Furthermore, many valuable connections were formed with diverse community leaders through this course.

Armed with this capacity, the NSWPB brought together the HR strategy focus group in June of 2014. The purpose of the focus group was to develop a Regional Human Resources Strategy that would ultimately better align labour supply and demand by (a) increasing the flow of the most pertinent, dynamic information to NSWPB about the workforce, and (b) increasing the capacity of NSWPB to detect patterns in the dynamic “churn” of the

workforce. Twenty workforce stakeholders, including 8 who had taken the course participated in these focus groups. There were 5 meetings of this focus group over the summer of 2014, plus 2 planning meetings as outlined in Table EX1.

Table EX1. Summary of planning and focus group meetings for the Regional HR Strategy Focus Group

	Date	Type	People	Selected Outcomes
1	May, 2014	Planning	4	Clarified goals Invitation wording and audience
2	June 9, 2014	Focus group	11	Establishing connection and enthusiasm Complexity approach to workforce Initial terms of reference
3	June, 2014	Planning	4	Clarified goals Observations and reflections from focus group meeting Social network visualization tools
4	June 23, 2014	Focus group	14	Social network visualization tools Building connection and enthusiasm Complexity approach to workforce
5	July 28, 2014	Focus group	11	Complexity approach to workforce Information gaps identified
6	August 13, 2014	Focus group	11	Reaffirmed purpose 2-pronged approach to HR strategy
7	August 25, 2014	Planning	3	Written statement of HR strategy

Emerging from these meetings, the focus group became the Regional HR Strategy Steering Committee in September of 2014 and presented its strategy, which includes 3 specific projects as outlined in Box 1 (page 18). The projects of the HR strategy are being readied for implementation in April, 2015 and a project timeline has been formed. Deliverables from this partnership project are shown in Table EX2. Observations and conclusions taken from the process are outlined in the following report.

Table EX2. Deliverables from the project

	Type	Deliverables
1	Knowledge	Social Innovation and Leadership in Complexity 2 sessions of 7-week course
2	Network	Network of workforce stakeholders 20 people, motivated and committed to the HR Strategy
3	Culture	Culture of the steering committee diverse group with a positive set of values
4	Capacity	Community capacity for complexity science and terminology
5	Direction	Clear direction on the 3 projects comprising the Regional HR Strategy

The Emergence of the Regional Human Resources Strategy Social Innovation and Leadership for Complex Challenges Partnership Project

Background

In 2012/2013, NSWPB partnered with a collaborative research project developed by the OECD Local Economic and Employment Development Programme (LEED)¹. This project examined the capacity of local employment services and training providers to contribute to job creation and productivity in several locations internationally. In Canada, in-depth work was conducted in Ontario and Quebec, specifically in Thunder Bay, Hamilton, Mauricie and Estrie. The consultant group, Townsend-Danis Advantage examined the employment and training services in Thunder Bay. NSWPB Subsequently invited them to facilitate a Think Globally, Act Locally workshop where Thomas Townsend conducted a “Future Backwards” visioning exercise with a group of workforce stakeholders. This facilitated discussion about the future of the North Superior Region occurred on Feb 19, 2013 and included 8 tables of 8-10 people each.

Among the major recommendations emerging from this report was that NSWPB work on developing local strategies that better connect the supply of skills to local employer demand while addressing broader obstacles to employment. In terms of how to achieve success, participants in the discussion emphasized the importance of collaboration, and the open sharing of information in equal partnerships.

Also in the winter of 2013, NSWPB engaged in a partnership project with the Food Security Research Network at Lakehead University examining the workforce multiplier effect of the local food system in Thunder Bay². This project brought NSWPB in contact with Dr. Connie Nelson who was interested in complexity theory as a lens for research and practice.

In July of 2013, the NSWPB Executive Director, Madge Richardson, met with Dr. Connie Nelson and Dr. Mirella Stroink from Lakehead University (and consulting company, 180 Institute) to further discuss complexity theory and potential future projects bringing this theory to the work of NSWPB. The possibility was discussed of the two professors holding a course on complexity theory and its potential applications to community development and innovation. The course would target community leaders in various social service and health sectors and would be offered in the winter of 2014. The potential applications of this theory to workforce planning and development intrigued Richardson, who noted the use of the same theoretical lens by the OECD project consultant. A brief summary of this potential project, which was shared with the NSWPB board is attached in Appendix B.

¹ <http://www.oecd.org/cfe/leed/localjobcreation.htm>

² <http://www.foodsecurityresearch.ca/index.php?pid=189>

In November of 2013, Nelson and Stroink attended a NSWPB retreat at Sleeping Giant Provincial Park. They provided an overview of complexity theory and some of its potential applications to understanding the workforce. In attendance were 7 board members and 2 staff, as well as Thomas Townsend, the consultant involved on the OECD project. A follow-up panel discussion of complexity, the workforce, and social innovation was captured later that day by local media³, and a report on the retreat was prepared and shared with the board⁴. Further discussion among Richardson, Stroink, Nelson, and Townsend revealed significant potential for further projects and growth through the application of complexity theory to workforce development. Specifically, the need to gain a better understanding of the labour supply from a complexity perspective was raised, and some implications of this understanding for the task of better connecting the labour supply with employment demand emerged.

Complexity Theory

Complexity theory, or complexity science as some are beginning to refer it (Mitchell, 2009; Johnson, 2007), is the *study of phenomena which emerge from a collection of interacting objects*. It is an emerging area of theory and research that spans disciplines such as mathematics, physics, biology, cognitive science, and economics. Because there are such diverse perspectives involved, the phenomena being studied are variously called complex systems, dynamical systems, non-linear systems, and complex adaptive systems, each with slightly different connotations.

Interdependent connections and emergence:

Collectively, these are systems that become what they are through the interactions of many independent components. The components in a system, which could be individual people in an organization or computers in a network or neurons in a brain, are independent in that they are free to act as they like but also interdependent in a network, such that the actions of each one affects the experience of all the other components in the network; and they in turn affect the experience of the original component. Figure 1 displays an interconnected system or network.

This interdependency leads to *emergence*, which is that the behaviour of the whole system has its own reality that is not predictable from the behaviour of the individual components themselves. In other words, through continual interactions among the components, the system as a whole develops characteristics one could not have anticipated from looking only at the behaviour of the components. These characteristics emerge through interactions. For example, as individuals in a workplace interact with one another, exchanging information, resources, and values, both formally and informally, they create

³ <http://www.netnewsledger.com/2013/11/26/social-innovation-workforce-planning/>

⁴ Appendix 1: Report on the NSWPB retreat, November, 2013

the culture and operations of the organization as a whole, an entity that is something greater than any of the individuals themselves.

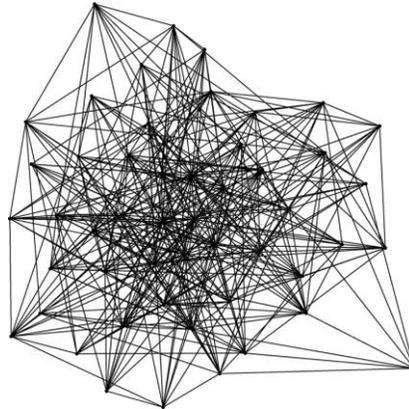


Figure 1. Interconnectedness in a complex system

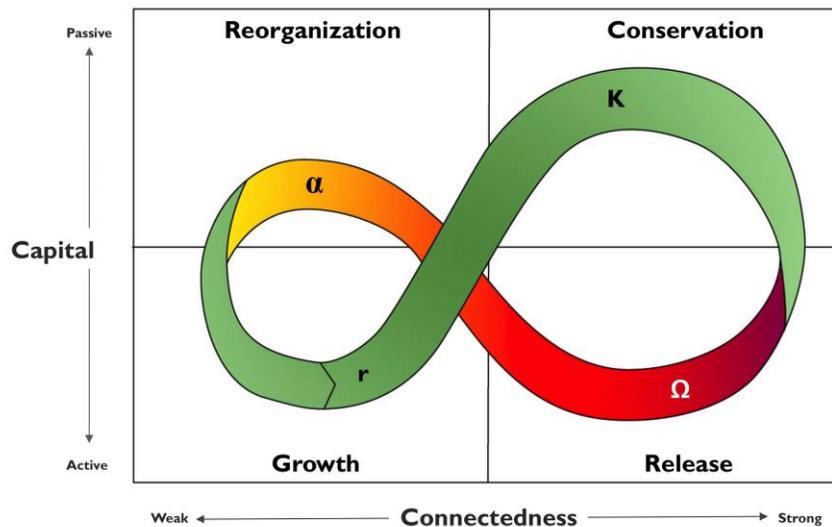
Complex Adaptive Systems Theory:

The theory within complexity science that has most relevance to this project is *complex adaptive systems theory*, as it is associated with the study of living systems such as ecologies, economies, and other human systems (Holland, 1992; Zolli,). In complex adaptive systems, the individual components in the system display the capacity to adapt and learn. They constantly vary the “rules” of interaction that they have with other components in the system so as to seek the best possible outcomes. Of course because all the other components in the system are also constantly adapting and varying their rules of interaction, the emergent whole is constantly shifting, it is dynamic. One consequence of this is that the emergent behaviour of the whole system is usually far from optimal. Indeed, there is no “optimal” end state because complex adaptive systems are always exhibiting new collective behaviour as they evolve (Holland, 1992).

Adaptive Cycle:

By studying ecosystems around the world, Gunderson and Holling (2002) observed that all complex adaptive systems undergo similar patterns of change over time. Specifically, they follow a 4-phase cycle of rapid growth, stable conservation, release, and reorganization.

Cycle of adaptive change



Source: Holling, 1987

In the growth phase, also known as exploitation, the system is characterized by rapid growth and diversity. In a forest, this would be the period approximately 5 years after a fire. In a business context, this would be a new start-up company with just a few people and a lot of growth. Opportunities and activities are diverse; connections among people are loose and often informal. Growth can seem chaotic, leading to an increasing need to bring structure and order to the activities of the system.

The conservation phase is characterized by slower growth, as the energy and capital of the system is accumulated and stored. Instead of great diversity, systems now see the dominance of a smaller few who control the capital and energy of the system. Stabilizing structures are introduced to the system that bring efficiency, regulation, and standardization. A forest in the conservation phase is characterized by a smaller number of species, such as large pine, that consume the majority of the forest's sunlight and nutrients, accumulating the forest's capital in the branches and trunk of these large trees. In a business, this would be an older company focused on producing known products or services with greatest efficiency, and building formalized structures (e.g., job descriptions, chains of command) that bring order and stability. As the system becomes increasingly structured, it also begins to lose resilience, becoming less able to adapt quickly to changing contexts or disturbances in the environment.

The release phase, also known as creative destruction occurs when the tight organization, structure, and stored capital and energy of the system are released, typically by a triggering event. In a forest this could be a fire or wave of insects that destroy the dominant species, returning the forest's capital to the ground. In a business, it might be a change in leadership, the termination of a program or product line, or bankruptcy. In an organization

the release phase is experienced as a breakdown of networks, a loss of direction, or as a crisis.

While the release phase is experienced as a loss, it is followed by the reorganization phase, which is characterized by experimentation and the introduction of novelty. The nutrients that were left behind by the release phase are reorganized and used by others in novel ways. In a business, there may be a number of false starts as failed experiments lead to reflection and new attempts. The reorganization phase is a time of innovation, and the combination of release and reorganization are important for organizations to undergo periodically in order to remain adaptive and resilient in a changing environment (Hurst, 2012).

Panarchy:

One final concept introduced by Gunderson and Holling (2002) is that of *Panarchy*. With this concept it is recognized that complex adaptive systems are nested within one another. For example, an individual person is comprised of numerous complex adaptive systems (neurological, immune, endocrine, for example), each with its own interacting components. At the same time, individual people are themselves the components that make up many other complex adaptive systems, such as organizations, communities, and economies. Systems at the larger scales tend to move through the adaptive cycle more slowly, and those at the lower scales cycle more quickly. Systems at different levels in the panarchy interact with one another, and affect one another's position on the adaptive cycle. For example, a release phase experienced by one organization may cause a cascading "revolt" up the panarchy triggering releases at higher, slower scales. Likewise, systems at higher scales can have a shaping effect on those at lower faster scales. When one organization undergoes a release, the options that they have for reorganization will be determined in part by the ways in which they interact with systems at the higher, slower scale. Government is a good example of the higher, slower cycling scale. A business may be releasing part of its function and seeking to reorganize, but will have to do so within the reporting and other workplace requirements set out by government, which has a dampening effect on the novelty that a business can introduce.

With this brief introduction to complexity theory, we begin our exploration of how the workforce may be viewed as a complex adaptive system.

Current Project

Social Innovation and Leadership in Complexity

The project began in April of 2014. The NSWPB sponsored the first two offerings of the Social Innovation and Leadership in Complexity course held through Continuing Education at Lakehead University. NSWPB sent out a promotional message for the course to their

networks⁵. This course is directed to executive management and board-level leaders in the social, community, and health services. The nature of complex systems, change over time, and the processes underlying transformative change, adaptive change, and resilience are all covered. In addition, unique approaches to problems that are complex, that emerge as a result of multiple interdependencies in open systems, as well as approaches to social change and innovation rooted in complexity science are explored and practiced.

This first offering of the course began in January of 2014, and there were 26 students including 1 staff and 2 board members from NSWPB in the course. Other students included the senior management of Community Living Thunder Bay, the board of the Thunder Bay Family Network, and staff from the Northwest LHIN, among others. In some of the class discussions, the application of the course concepts to understanding the workforce as a complex adaptive system was explored, and the thinking of all participants, including the instructors, was challenged to picture the people who interact and connect with one another over time to comprise both the labour supply and demand as a complex system. The class met 7 times in alternate weeks from January to May, 2014. The course outline for this course is included in the appendix⁶.

The NSWPB invited the other individuals in the course to use their boardroom as a meeting place for group homework sessions. This resulted in the development of a semi-regular complexity study group self-named the 360 working group, and discussions were beneficial for all. The applications of complexity principles to unique problems occurring within specific local organizations were explored. Participants brought their knowledge to life through discussion. The diversity and wisdom of this group and the class as a whole were accessed as NSWPB brought its quest of understanding the workforce as a complex adaptive system to discussions.

The original plan had been to offer a second, condensed version of the course in the summer of 2014 to reach a number of the NSWPB board who were unable to take the course in the winter. However, due to scheduling difficulties, the course was again offered in its full 7 alternate-week format from September to December, 2014. In this second run of the course there were 30 individuals in attendance, including 1 board member and 1 staff member of NSWPB. Other students included the senior management of Options Northwest, several individuals from St. Joseph's Care Group and several from the Thunder Bay District Social Services Administration Board. Through participation in both of these courses, significant increases were made in NSWPB's ability to conceptualize the workforce as a complex adaptive system and use the language of complexity science in exploring the implications of this conceptualization.

⁵ Appendix 2: Message of recruitment from NSWPB for the course

⁶ Appendix 3: Course outline for Social Innovation and Leadership in Complexity

HR Strategy Working Group

Preparation and Planning: May, 2014

In May, 2014, the NSWPB Executive Director, a staff member, and Dr. Connie Nelson and Mirella Stroink met to plan the launch of the Regional Human Resources Strategy working group. In two planning meetings, complexity concepts such as feedback loops and pattern detection were used as the group explored the twin goals of (a) increasing the flow of the most pertinent, dynamic information to NSWPB about the workforce, and (b) increasing the capacity of NSWPB to detect patterns in the dynamic “churn” of the workforce. The first invitation to a meeting of the Regional Human Resources Strategy was made on May 20, 2014⁷, and was sent to the board of NSWPB and the 30 individuals from the winter, 2014, session of the Social Innovation and Leadership in Complexity course, which was just ending. Many of the people in the course had already met with NSWPB during the class as part of the 360 working group.

Meeting #1: June 9, 2014

The June 9, 2014 meeting agenda is shown in the appendix⁸. At this meeting, Richardson shared the Partnership summary that had been approved by MTCU for the HR strategy and discussed the history of the group and the work that led to this meeting call. She presented findings from the OECD study showing a gap between labour skills and employment demand in Thunder Bay. In particular, the group reviewed and discussed an 11x17 page, titled “Matching Labour Force Demand and Supply,” on which a summary graph depicting the labour supply-demand gap from the OECD research appeared in the middle, with information already available on labour supply and demand on the left and right respectively⁹. Discussion focused on additional information known to group members, as well as needed information to provide a more comprehensive picture of labour supply and demand.

Richardson then introduced Nelson and Stroink and described their role in facilitating the project and applying complexity theory to the goal of understanding labour supply and better matching supply to demand. It was expressed to the group that their role was to help steer the project by identifying next steps and phases of work. Also at this meeting the group explored an initial terms of reference for the group¹⁰ and discussed its membership, asking who should be at the table who was not yet there. Discussion at this meeting was enthusiastic and several ideas emerged as the group worked to see the workforce as a complex and adaptive system of interdependent people. This perception of the workforce was recognized as in contrast to the data-driven view in which the workforce appears as a series of disjointed, static demographics. This complexity lens led to the noted observation

⁷ Appendix 4: Invitation to Regional HR Strategy focus group sent May 20, 2014

⁸ Appendix 5: Agenda for June 9 meeting

⁹ Appendix 6: Matching Labour Force and Demand document

¹⁰ Appendix 7: First draft terms of reference for the focus group

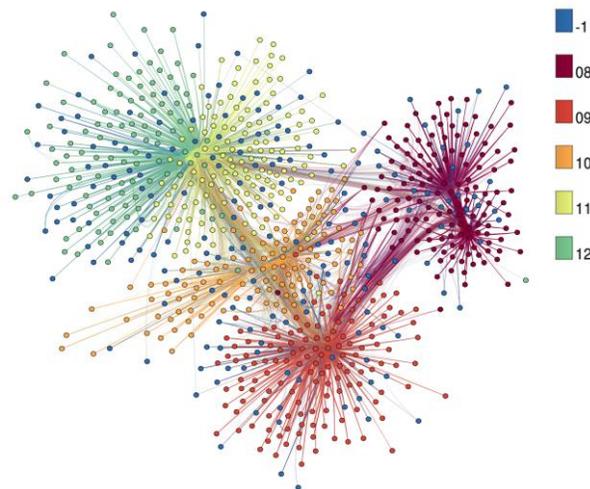
that preparing individual people to work is insufficient and that instead we are preparing an entire system for work.

Preparation and Planning: June, 2014

In a subsequent planning meeting, the goal of finding a complexity-inspired way to describe and visualize the whole labour supply became clearer. It was also recognized that it would be helpful to track the emerging capacity for using a complexity lens and its terminology in the dialogue of the HR strategy focus group. The first two meetings of the focus group were audio recorded with the idea of transcribing these meetings and tracking the use of complexity language.

At this planning meeting, Stroink brought forward a software application, Gephi¹¹, which is available for free online and is based on Graph theory¹² and complexity principles. This tool can visualize or map a network of interconnected nodes, such as those shown in Figure 2. In this case, it could visualize workers in a workforce as individual agents interconnected with one another in dynamic patterns through changes in training and work experiences. It was considered whether this tool could enable us to visualize the labour supply as one holistic talent pool in the region. It was also noted that dialogue in the first meeting of the HR Strategy focus group seemed to revolve around two key points, (1) visualizing the labour supply as a complex system, and (2) advancing an HR mindset, affecting people's thinking about the workforce and the best way to manage people.

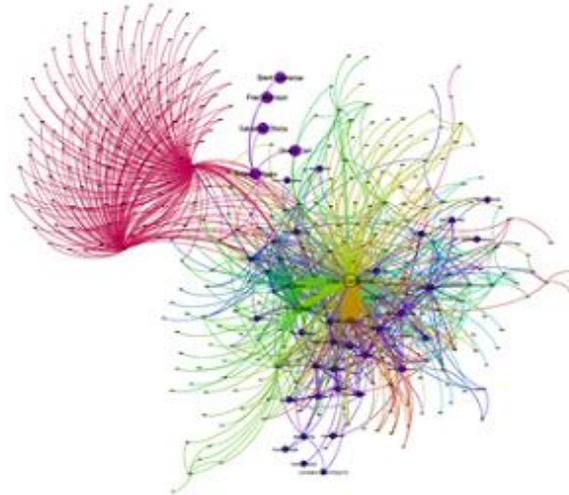
Figure 2. Sample Social Network Visualizations



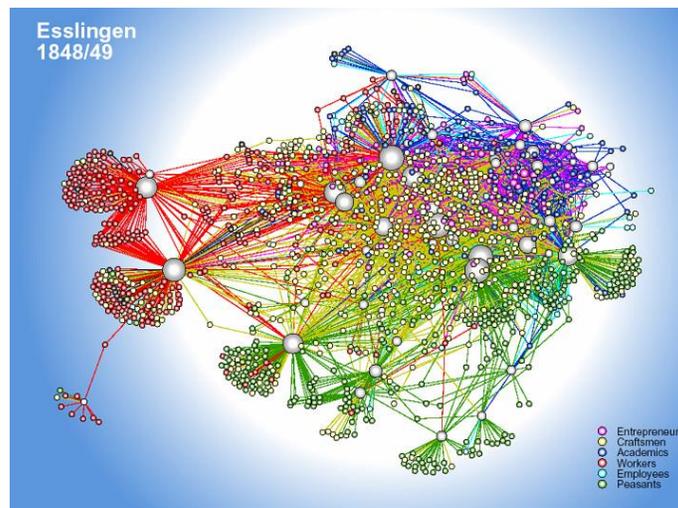
<http://vidi.cs.ucdavis.edu/research/socialnetworkvis>

¹¹ Gephi software: <http://gephi.github.io/>

¹² Graph theory: the study of graphs, which are mathematical structures used to model pairwise relations between objects



<http://ichromatiq.blogspot.ca/2010/05/visualizing-email-communications.html>



<https://bayramannakov.wordpress.com/page/2/>

Meeting #2: June 23, 2014

The second meeting of the HR Strategy focus group was called for June 23, 2014. The agenda for this meeting and the resulting minutes are shown in the appendix¹³. People in attendance included 4 new people. Following introductions, the approved purpose of the project was again reviewed. While there were no minutes from the first meeting, notes that were taken were discussed. The terms of reference were revisited and incorporated core values and principles of importance identified on June 9th.

Discussion focused on the need to identify ways to observe patterns and the internal “churn” of the labour supply. Social network visualization maps and the associated software was introduced to the group in an on-screen demonstration. At this meeting the insight was reached that as a complex adaptive system consisting of individual people

¹³ Appendix 8: Agenda and minutes for meeting #2, June 23, 2014

interacting with one another from different positions, the labour supply cannot be separated from the system that comprises labour demand. In other words, both labour supply and labour demand result from the interactions among people in one complex adaptive system. In order to challenge people to think about the labour supply in different ways, we went around the room sharing our own stories of labour supply. These stories revealed diversity in how people conceptualize labour supply. For some, their connection with labour supply was focused to one sector or to questions such as how to meet labour shortages in certain areas. For others, labour supply had to do with connections and finding purpose. The need to better understand change in the workforce was discussed as people are seeking more complexity-inspired ways to manage and respond to change.

Meeting #3: July 28, 2014

The HR Strategy focus group met again on July 28, 2014. In attendance were 11 people, including Stroink, Richardson, a board member and a staff member of NSWPB. The agenda from this meeting and meeting minutes are shown in the appendix¹⁴. Stroink presented some information on the adaptive cycle, which is a 4-phase cycle of growth and collapse seen in all complex adaptive systems. Evidence of the 4 phases in the context of the workforce were discussed. The 11x17 document from the June 9 meeting, Matching Labour Force Demand and Supply, was shown again, and the group discussed the information on labour supply that would be needed in order to have a dynamic image of labour supply. Information such as essential skills, hard-to-find skills, school graduation rates, and demographics of people supported through employment agencies were listed. The challenge of accessing information on people who are currently employed but would consider different employment was discussed. In order to capture this full range of information it was identified that we would need a continuous approach to data collection.

Meeting #4: August 13, 2014

The HR Strategy focus group met again on August 13, 2014. The agenda and resulting minutes and notes from this meeting are shown in the appendix¹⁵. At this meeting, the group reaffirmed its purpose being to identify a strategy through which we could access information and visualize that information in a way that retains its dynamics, so as to better match labour supply and demand. Through discussion, it became clear that the group was working with a 2-pronged approach to its regional HR strategy. This 2-pronged approach became the core of the HR strategy. At this meeting, it was conceptualized as follows:

- (1) **Labour Supply Information:** The first focus is to increase access to the labour supply data that the group had identified as “needed” in the previous meeting. To do this, the group’s strategy would be to build networks of stakeholders, consider inviting representatives of these stakeholder organizations to the focus group, and then build capacity within NSWPB to manage and visualize this data. This approach would provide a better view of labour supply and increase the feedback or flow of information back to the workforce planning board.

¹⁴ Appendix 9: Agenda and minutes for meeting #3: July 28, 2014

¹⁵ Appendix 10: Agenda and minutes for meeting #4: August 13, 2014

(2) **Labour Supply Network Mapping:** The second focus in the strategy is to begin depicting the individual-level of the labour supply as a complex adaptive system. To do this, we would survey individual people using an online portal that would enable people to regularly update and provide additional information on their workforce activities and connections. This information would then be mapped as a network using an application such as Gephi. The group discussed different ways to promote this survey using social media, and various potential sub-groups of the workforce to pilot test it with. The possibility of running this project as a research project through Lakehead University was discussed. At this meeting, the group again explored community connections who should be represented in the group and identified 2 additional organizations to follow up with.

Following this meeting, Stroink, Kallio, and Richardson began drafting a document to summarize the projects of the HR strategy on August 15, 2014. The three met on August 25 to finalize this document, which was then circulated to the focus group prior to NSWPB's consultations in early September. This document became the Regional HR Strategy steering committee's terms of reference.

Into the Future

The HR Strategy focus group has become the HR Strategy Steering Committee, and has continued to meet, as the 2 pronged approach to the strategy formed into 2 and then 3 projects, including a developmental evaluation as the third project. These projects are summarized in Box 1.

The projects of the HR strategy are being readied for implementation in April, 2015 and a project timeline has been formed¹⁶. The steering committee operates under an evolving terms of reference, which it considers to be a living document¹⁷. The committee met in October and November of 2014 as well as in January of 2015. In January of 2015 they developed a project promotion document to share with potential funders¹⁸. They will continue to meet regularly as the scope and implementation of the projects becomes clearer.

¹⁶ Appendix 11: HR Strategy Project Timeline

¹⁷ Appendix 12: HR Strategy living terms of reference

¹⁸ Appendix 13: Project promotion document

Box 1: Projects of the Regional HR Strategy

1. Building a labour supply knowledge network: Through a process of building trust and collaboration, the North Superior Workforce Planning Board (NSWPB) will nurture the formation of a living knowledge network of people and organizations who are stakeholders in labour supply. Processes will be developed through which to query this network, and to manage, consolidate, and regularly share knowledge with the network. Thus, the project will enhance the exchange and use of the full diversity of labour supply information that is already available.

2. Mapping the labour supply as a social network: Through a professionally developed website and mobile application, we will be able to gather information from a pilot sample of approximately 200 people that will be analyzed using network analysis and mapping. This will provide a new category of labour supply data. Being able to visualize the workforce as a dynamic and patterned whole that is formed through the connections among people is a marked alternative to the static, broad, group-level statistics that are currently available. This is also a research project out of Lakehead University for which federal funds are being sought.

3. Developmental evaluation: Developmental evaluation is an approach to program evaluation that involves documenting decisions and formalizing the learning and the knowledge bases that drive decisions. It provides real-time data and feedback that enhances the development, testing, refinement and quality of potential solutions.

Project Deliverables

The primary deliverables of this project are as follows:

- **Social Innovation and Leadership in Complexity:** Two sessions of this 7-week course offered successfully to 26 and 30 students respectively. The course reached the leadership of more than a dozen local organizations. It brings the lens of complexity science to the deep, multi-sectoral challenges facing communities, and provides tools such as innovation and an understanding of change for these challenges.
- A strong network of 20 people, many of whom are familiar with complexity science, who are enthusiastic to continue developing a way to visualize the workforce using complexity principles. This group is motivated and committed to staying involved in the projects, there is a sense that this group has taken ownership of the HR Strategy.
- The culture of the HR Strategy Steering Committee is its own outcome. This diverse group came together around a shared perspective and a set of positive values that they are putting into action through these projects.
- Enhanced community capacity to use the terminology of complexity science and to use the principles of the theory in conceptualizing the workforce as a complex adaptive system of people interacting with one another.

- Clear direction on 2 (now 3) projects that form the Regional HR Strategy and will collectively provide a novel way to visualize the dynamics of the labour supply while providing more real-time and accurate information to support stakeholders as they work to match labour supply with demand.

Discussion

The expected outcomes of this partnership project included (1) a common understanding of how to apply complex adaptive systems theory to the dynamics of the workforce, (2) a strengthening of the team's shared capacity to conceptualize the workforce as a complex adaptive system, (3) a common vocabulary, and (4) a comprehensive human resources strategy for the Thunder Bay District. The work of the partnership project has produced gains in each of these areas.

Applying complex adaptive systems theory to understanding the workforce has not, to our knowledge, been done before in published research. Complexity theory has been used to conceptualize organizational processes and leadership for innovation (e.g., Hurst, 2012; Goldstein, Hazy, & Lichtenstein, 2010), as well as community change and social processes (e.g., Westley, Zimmerman, & Patton, 2007), but not the workforce. By offering the Social Innovation and Leadership in Complexity course, we were able to advance the capacity of over 50 local people to understand and apply complex adaptive systems theory. Through the meetings and facilitated discussions of the HR Strategy working group, we were able to explore multiple aspects of how the workforce operates as a complex adaptive system. These discussions deepened everyone's understandings of the complexity concepts, increased their use of the vocabulary, and revealed new insights through their application to the workforce.

The process that has unfolded throughout the development of the HR Strategy itself demonstrates aspects of complex adaptive systems theory. Previous attempts to understand workforce dynamics have emphasized group level statistics, such as the percentage of women or men, or the percentage of people with various levels of education looking for work, or being employed in various sectors. Moving toward an understanding of the workforce as a dynamic phenomenon, emerging through the interdependent interactions of people ranging from the local to the global scale, required a shift in thinking; it required the release and reorganization of thought structures.

This was not always easy for people, but the qualities that made that effort successful are predicted by CAS theory. For example, when systems reorganize, the diversity and novelty of the elements in the system and the quality of the newly forming connections among those elements increases the potential for innovation within the system, and it also increases its resilience. The HR Strategy working group was successful in part because it brought in diverse stakeholders in a positive environment where all voices were heard and deep connections could be formed. These may have contributed to the novelty of the proposed projects as well as to the commitment of the group to pursue those projects.

With the proposed projects in hand, the HR Strategy group is now moving up the adaptive cycle through growth. Predictably, people are excited, growth is rapid and connections are informal. The need to bring structure and order to this work led to the development of a terms of reference, which will point the work toward the conservation phase. At the same time, the awareness of the group of the dangers of a deep conservation phase (loss of resilience) means that we are building into our processes opportunities to invite novelty into the process, to release ideas or structures that are impeding the group's adaptation and encourage innovation. For example, while a terms of reference has been written, the group specifically describes this as a living document, one that can be rewritten to suit changing conditions and experiences.

Through the very positive connections formed within the steering committee, the shared commitment to the projects, and the shared complexity perspective, innovative ideas for further study and partnership development have emerged that will significantly increase our capacity to understand the dynamics of the workforce and better connect labour supply with labour demand.

Appendices

Appendix 1: Report on NSWPB Retreat November, 2014

Exploring a Complexity Perspective: Changing our Narrative on Labour Trends

Brief Report on the November 23 workshop facilitated by Connie Nelson and Mirella Stroink for the North Superior Workforce Planning Board

The purpose of the workshop was:

- (a) to build understanding of complexity principles and practices
- (b) to apply a complexity lens to the group's vision of the workforce and its dynamics, and
- (c) to build confidence in using complexity principles to create jobs and increase socio-economic well-being in our region.

Part 1: Presentation and Discussion

Following an introductory discussion on the need for a complexity-inspired approach to contemporary challenges in the workforce, the speakers presented the foundations of Complex Adaptive Systems Theory. Highlights included:

A **Complex System** is a collection of individual agents, who have the freedom to act in unpredictable ways, and whose actions are interconnected such that one agent's actions changes the context for other agents. Examples of complex systems include termite colonies, stock markets, the internet and communities of people.

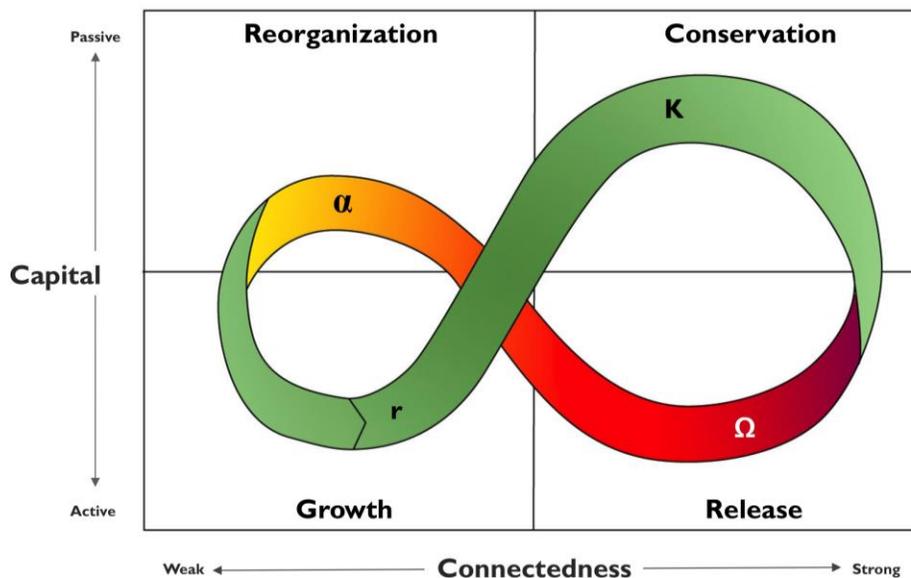
A complex system, as a whole, will form into patterns that are not obvious from the behaviour of the individuals within the whole. These patterns are not designed or planned but arise spontaneously from the interactions among people and organizations in the system. The murmuration phenomenon was presented as an example¹.

Through group discussion we identified individual workers, bosses, and organizations/businesses as the parts of a complex system (with other complex systems

¹ A video on murmuration was shown, see: <http://vimeo.com/31158841>

contained within the whole). They interact with each other by exchanging information, values, money, and goods or other resources. The complex system adapts to changes occurring at other levels such as costs of materials or global economic or political events. Patterns that emerge from the interactions of these components in the system include even briefly stable states in the economy or workforce characteristics and trends.

The presenters summarized the 4 phases of the **Adaptive Cycle**, which is a naturally occurring cycle of change in complex adaptive systems: growth, conservation, release, re-organization.



Growth: Increasing skills, knowledge, and capital within the system; increasingly formal relationships.

Conservation: The system's resources are now being used up just to maintain the system's structure; few resources left to adapt to change or invest in new growth; the system becomes brittle, rigid, and resilience declines.

Release: The capital and knowledge accumulated by the system are released for new investment; experienced as loss or collapse.

Reorganization: Experimentation and abundant new growth out of which investment will need to favour 1 or 2 new directions for growth.

The adaptive cycle is normal and occurs repeatedly. The group discussed cycles of change in social and community systems, as well as in the economy and workforce. We attempted to map different aspects of the workforce and different organizations on the adaptive cycle.

The **resilience** of a system is its ability to absorb shocks or disturbances and still retain basic function and structure. Resilient systems are those that retain enough core structure and function in the reorganization phase that the overall pattern continues with some new adaptations, allowing the system to adapt itself to changing circumstances or pressures.

Resilience itself is neither good nor bad. Unhealthy systems can be high in resilience. Sometimes, social change is about *reducing* the resilience of unhealthy systems.

The presenters then introduced the concept of a **wicked problem**, which is a term that originates in the social planning and policy fields. The term describes problems that are difficult or impossible to solve. These problems arise through the interactions among many different components across multiple open systems. For example, addiction is a problem that arises through the interactions of societal and economic factors, the behaviour over time of family and friends, resources available to an individual, as well as emotional, cognitive, and physiological factors within the individual. Wicked problems are by definition difficult to even define because they look different from different perspectives. Wicked problems are also challenging to solve because efforts to solve one aspect may reveal or create other problems. The exploration of wicked problems requires a multi-sectoral, collaborative approach rooted in dialogue.

Part 2: Wicked Problem Analysis

The group gathered into two break-out clusters to explore wicked problems (or questions) for the North Superior Workforce Planning Board. These would be problems that seem paradoxical and multiply caused, having roots in different fields or sectors that do not necessarily view the problem the same way.

The task was to generate pairs of opposites or paradoxes at play for the NSWPB and then to explore the wicked problems that relate to these paradoxes.

Following discussion in the separate groups we gathered some wicked problems in a whole group discussion. These were as follows:

- How can the NSWPB set goals that are responsive to the workforce and yet also respond to ministry goals and direction?

- How can the NSWPB ensure diverse representation on the board, thus maintaining diversity of perspective, while also keeping board participants engaged?
- How can the NSWPB draw and employ skilled immigrants in a complex, field-specific context of regulations and international training requirements?
- How does the NSWPB respond to specific barriers (the specific barriers to employment associated with particular groups or sectors) while at the same time working toward the whole vision or overall problem?

Appendix 2: Message of recruitment from NSWPB for the course

I would like to bring a very exciting opportunity to your attention. Lakehead University, through their Continuing Education department, is offering a Social Innovation and Leadership for Complex Challenges course beginning on January 31/14. It is a 7-week course held on alternating Friday mornings. As you are aware, we are faced by complex problems and situations on a regular if not daily basis. Wouldn't it be wonderful to have techniques that would assist us to manage within the complexity and find innovative and simple solutions to the complex problem? Absolutely. This course will assist you in developing capacities to "perceive, reason, and manage within complexity, to nurture an ecology of innovation, and to discover the simple solutions that often lie on the other side of complex problems". To learn more on this exciting opportunity that will be facilitated by Connie Nelson and Mirella Stroink of 180 Institute, please read the following information that will outline more of what this course has to offer as well as specifics for registration and schedules and contact should you have any questions or require additional information. I am looking forward to participating in the course and hope to see you there!

Appendix 3: Course outline for Social Innovation and Leadership in Complexity

Social Innovation and Leadership for Complex Challenges

A Continuing Education course through Lakehead University

Course Outline

Class meetings: 8:30 to 11:30am for 7 alternating Friday mornings beginning January 31 and ending April 25, 2014

Location: Conference Room A and Fireside Lounge, Bartley Residence

Course Description:

The executive leadership of today's social-benefit organization is faced with an increasingly complex environment. In order to make people's lives better and to address community issues, more of the same-old solutions are no longer adequate. Leaders are being called upon to mobilize engagement through all levels of their organizations, identify and grow innovation, adapt quickly to change, and collaborate across sectors to enhance the resilience of their organization and the community as a whole. These requirements demand a unique set of capacities and a mindset that embraces complexity. In this course, community leaders and university faculty with expertise in complexity science will work together to build understanding of the complex dynamics of organizations and communities. Through conversational learning techniques and practical exercises we will develop the capacities to perceive, reason, and manage within complexity, to nurture an ecology of innovation, and to discover the simple solutions that often lie on the other side of complex problems.

Learning Objectives:

Upon completion of this course, you will gain:

- An understanding of the dynamics of organizations and communities as complex systems.
- An understanding of how communities and organizations can show resilience while undergoing transformation, responding adaptively and proactively to internal and external change.
- The capacity to nurture and grow an ecology of innovation within your organization.
- The skills to lead a complex organization in a complex environment.

Each class will include lecture, discussion, reflection, and activities that include case study analysis and experience with each of 7 *liberating structures*. Liberating structures are fun group learning techniques that can be brought back to your organization in order to enhance innovation, bring a complexity lens to entrenched problems, and support collaboration. Two short textbooks will be assigned as part of the course, and discussion will incorporate material from the readings. There will also be an attached list of

recommended readings and resources that include on-line videos. A course D2L website will be available for easy access to readings and resources, and to continue discussions beyond the class meetings.

Readings:

- Goldstein, J., Hazy, J.K., & Lichtenstein, B.B. (2011). Complexity and the nexus of leadership: Leveraging nonlinear science to create ecologies of innovation.
- Meadows, D.H. (2008). Thinking in systems: A primer. London, UK: Earthscan.

Faculty:

- Dr. Connie Nelson, School of Social work and the Food Security Research Network
- Dr. Mirella Stroink, Department of Psychology and the Food Security Research Network

Connie and Mirella have been sharing a journey through complexity science since 2010, when a conversation about teaching, learning and community resilience culminated in a joint presentation at the Resilience 2011 conference, an international gathering of scholars in complexity. Since then, both have brought the framework of complex adaptive systems theory and innovation to their research, teaching, community and organizational development work. They have written 5 papers applying complex adaptive systems theory to community issues, and have presented the ideas at several conferences. Both are deeply involved with the Food Security Research Network, which bases its approach and organization on complexity principles, and they have co-facilitated a university seminar on complexity science for 3 years. Mirella is an associate professor of social and community psychology at Lakehead University. Connie is a professor of social work at Lakehead University, with a background in organizational behaviour.

Outline of topics:

1. January 31, 2014

Simple, complicated, and complex problems. We will introduce the perspective of complexity science by distinguishing among simple, complicated, and complex problems. Drawing on this understanding we will explore and discuss complex or “wicked” problems that arise in participants’ organizations. Through discussion and case examples we will build understanding of the nature of complex systems and identify the various complex systems at work in our own lives. Connection is an important concept in complexity science, and we will build connection within the class by adopting a stance of curiosity as we focus our shared attention on the problems we want to solve in an exercise called Impromptu Networking. Liberating structure and homework assignment: Wicked Problem Analysis.

2. February 14, 2014

Complexity science and Innovation. We will introduce complexity science and explore emergence and innovation from this perspective. Understanding how patterns of behaviour or outcome emerge through the dynamic interactions of complex systems offers a new perspective on entrenched and complex challenges, and can often reveal the simplicity on the other side of the complexity. Through case studies and discussion we will explore the workings of innovation in a complexity lens. Liberating structure and homework assignment: 25/10 Crowd Sourcing

3. February 28, 2014

Adaptive cycle: We will study the 4 phases of the adaptive cycle and discuss how individuals, organizations, communities, and societies undergo these 4 phases. Discussion will include case studies and examples from participants' organizations. Insights may include how to nurture an "ecology of innovation," the periodic need to release structure, and tips to avoid common "traps." Liberating structure and homework assignment: TRIZ & Discovery & Action Dialogue, Ecocycle Planning

4. March 14, 2014

Panarchy: We will work together to identify how the systems we populate are nested within one another at higher and lower scales, and how each of these levels or scales has adaptive cycles of their own, moving at faster and slower paces. In this way, learners will be able to visualize how challenges and opportunities in their organizations emerge through the dynamics of cycles operating at different scales. The way in which innovation can spread and how interacting systems can co-evolve, at times resulting in surprises(!) will be revealed. Liberating structure and homework assignment: Panarchy

5. March 28, 2014

Resilience: Building on our growing understanding of complex systems we will explore the concept of resilience. Discussion and activity will focus on how to prepare oneself and one's organization to respond quickly to threat and change and to handle uncertainty. This includes a core capacity of actively shaping the complex system of one's organization, being able to see different futures unfolding and acting in a distributed fashion. One advanced insight may be that when viewed within the panarchy, resilience at different scales or levels can be either healthy or unhealthy for the overall system, and the resilience of each level varies in response to changes happening at other levels. Liberating structure and homework assignment: Critical Uncertainties

6. April 11, 2014

Transformation and Change: Sometimes the most adaptive thing for a system is transformation. We will discuss the distinction between adaptation and transformation and how both are important to the overall resilience of a system. At times an organization, department, program, or even a whole civilization needs to be allowed to collapse so that the new may emerge. We will discuss complexity concepts such as attractors and regime-shift and will explore through discussion and activity how to navigate a system through an intentional and creative transformation while steering clear of two critical traps. Through our earlier discussions and case studies we will identify an entrenched system that would

benefit from transformation and role-play strategies for bringing about positive change.
Liberating structure and homework assignment: TBA

7. April 25, 2014

Ecology of Innovation: In this concluding session we will summarize critical skills and capacities for leadership and innovation in the social benefit sector. An overview of complexity-inspired applications such as social entrepreneurship, social finance, and crowd-funding will be provided. Activities allowing for the practice of these critical skills will be conducted, and an ongoing homework assignment that can be a springboard for innovation at your own organization will be offered. Celebratory lunch is included.

Appendix 4: Invitation to Regional HR Strategy focus group sent May 20, 2014

Good afternoon everyone. As you are aware, one of NSWPB's approved partnerships within our 2014-2015 Local Labour Market Plan, is the development of a Regional Human Resources Strategy. It has been approved as a multi-year plan by our funders, the Ministry of Training, Colleges and Universities through Employment Ontario.

This very important and large undertaking for a district has not been done before. The labour market and workforce is very dynamic and to plan within this ever changing environment and landscape is indeed very complex. In February of 2013 a "Future Backwards" exercise revealed that one critical action to advancing development in the Thunder Bay District is to form a comprehensive human resources strategy that includes detailed skills supply information. This would inform skills development and immigration projections in the area, and would help prioritize potential secondary business development activity. Our plan is to develop this human resources strategy around a framework informed by complex adaptive systems theory.

The workforce can be conceptualized as a complex adaptive system. The dynamic interactions that occur among all individual workers and employers, their organizations and businesses, result in emergent, higher-order patterns of activity on the level of the whole workforce. These interactions also produce identifiable phases of stability and change over time. Like other complex adaptive systems, the workforce is also embedded within other relevant complex systems at higher scales, such as the regional, national, and international economies, and both affects and is affected by these other systems. Feedback loops and other processes shape the workforce system's capacity to adapt to change and show resilience in the face of disturbances. Adopting this lens enables us to observe the dynamics of change over time in the workforce of the Thunder Bay District. It also provides a means to understand how innovation can arise, and the approaches to leadership and community development that best support innovative approaches to complex challenges.

The development of the Regional HR Plan will involve focused meetings of the two faculty members of LU (Dr.'s Mirella Stroink and Connie Nelson), NSWPB staff Directors and beginning June of 2014, we will build on our case study and develop a comprehensive human resources strategy for the Thunder Bay District. It is our hope that as a recent graduate of the Social Innovation for Leadership in Complex Challenges, or someone interested complexity, that you would be interested in and consider joining this focus group and applying your learning and understanding of complexity science to this project. (FYI, LU will again be offering the Social Innovation for Leadership in Complex Challenges course through LU's Continuing Education in the Fall of 2014! Please watch for further correspondence or registration materials.)

We have scheduled our first meeting of the Regional HR Strategy Group for 9:30 a.m. – Noon, Monday, June 9/14 to be held in our boardroom located at 107B Johnson Avenue, Thunder Bay, Ontario, P7B 2V9. Please contact Karla Comisso at admin@nswpb.ca to confirm your attendance. We would appreciate receiving your RSVP by Thursday, June

5/14. Thank you and I am truly looking forward to working with you on this very exciting and cutting edge project!

Madge Richardson
Executive Director
North Superior Workforce Planning Board
107B Johnson Ave. Thunder Bay, ON P7B 2V9
Toll Free# 1-888-800-8893
Fax# (807) 344-5464
Email: mrichardson@nswpb.ca
Website: www.nswpb.ca

The North Superior Workforce Planning Board is funded by the Ontario Ministry of Training, Colleges and Universities.

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Appendix 5: Agenda for June 9 meeting



North Superior
Workforce Planning Board

Regional Human Resources Strategy Focus Group

Monday, June 9th, 2014

9:30 a.m. – 12:00 Noon

NSWPB Boardroom

MEETING AGENDA

Presenter	
Madge	I. Welcome and Background Summary
Group	II. Introductions
Connie & Mirella	III. Project Approach <ul style="list-style-type: none">i) November/13 Board Development recapii) Initial discussionsiii) Methodologyiv) Terms of Reference for Focus Groupv) Membership – any missing community partners?vi) Timeline
Connie & Mirella	IV. Next Meeting Date
Connie & Mirella	V. Adjournment

Appendix 6: Matching Labour Force and Demand document

Matching Labour Force Demand and Supply

Supply

Known /confirmed:

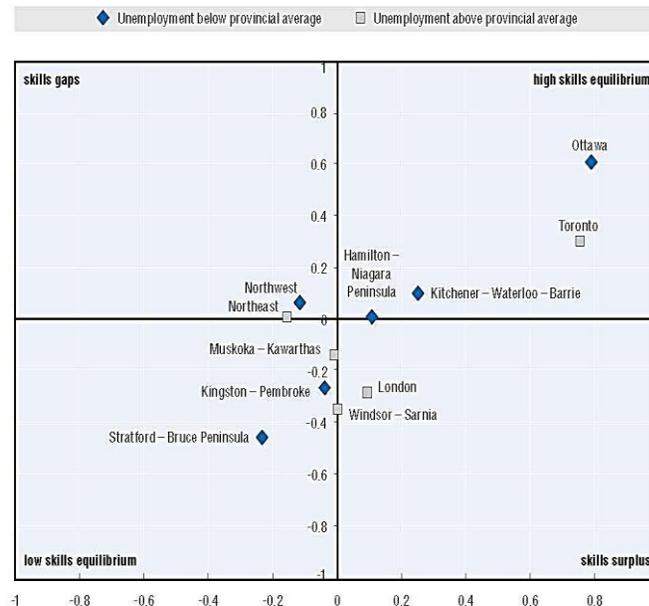
- Labour force
 - #s employed
 - #s unemployed
 - Employment Ontario data
- Out of labour force
- Aboriginal Peoples Survey (2012)

Unknown/ unconfirmed:

- Ontario Works and/or ODSP participants

Our ultimate goal is to develop a Regional Human Resources Strategy that will enable us to match labour force supply to demand. To do that, we will need to identify components of each and then determine 1) what we know or can confirm on each side; 2) what we need to know or confirm on each; 3) strategy to get information/data we don't have; and 4) develop strategy of next steps needed to reach our goal and the ability to match skill to demand.

Figure 4.5. Balancing Supply and Demand, Ontario, 2011



Box 4.1. Explaining the diagnostic tool

In order to approximate the demand for skills a composite index was developed including the percentage of the population employed in medium-high skilled occupations and Gross Value-Added (GVA) per worker. The supply of skills was measured by the percentage of the population with post-secondary education. The indices are standardised using the inter-decile method and are compared with the national median. The analysis is carried out at the level of Territorial Level 3 regions (regions with populations of approximately 150 000-800 000).

Further explanations on the methodology can be found in Froy, F., S. Giguère and M. Meghnagi (2012), "Skills for Competitiveness: A Synthesis Report", OECD Local Economic and Employment Development (LEED) Working Papers, No. 2012/09, OECD Publishing. <http://dx.doi.org/10.1787/5k98xwskmvr6-en>.

Demand

Known/confirmed:

- Industry Evaluation Framework – Thunder Bay CMA
- Top 10 industries / all industries in Thunder Bay CMA
- Custom Labour Market Report – Thunder Bay District Mining Industry
- [Addendum - Custom Labour Market Report - Thunder Bay District Mining Industry](#)
- Occupational Time Continuum in Mining
- Construction Labour Market Outlook for NW Ontario
- Skills and Characteristics of Natural Resources Management Employers in Northern Ontario
- [Health Human Resources Study: Forecasting Needs in Northwestern Ontario 2013-2025](#)
- Workforce Multiplier Effect of Local Farms and Food Processors in Northwestern Ontario
- EmployerOne Survey (Fall/Winter - this year)
- Northwestern Ontario's Economy through the Eyes of the Workforce (end of this fiscal year)

The graph is about what kind of jobs is the local Thunder Bay area creating and what are the skill levels of those who are looking for work. Basically, the story it tells, is that employers are looking for people with slightly higher skill levels than those who are looking for work. Work in the area is generally medium skilled in nature and the market generally clears (matching is pretty good) but that more of the demand is for slightly higher skills. This could point to a skills development issue. May mean we are seeing more hiring from outside the TB area for skilled jobs and that higher skilled positions are taking longer to fill.

Appendix 7: First draft terms of reference for the focus group

Terms of Reference

Regional HR Strategy

Official Name: NSWPB Approved Partnership - Regional HR Strategy

Project Purpose:

A key economic dimension of any community workforce is the alignment between the needs of those who hold or are seeking to hold paid employment (supply) with those sectors that have employment to offer (demand). The labour supply describes both the number of people able to engage in paid employment and the skills, training and credentials they bring to the workforce. The labour demand describes the locally available jobs and the specific skills training and credentials needed to competently perform that work. Effective alignment recognizes that labour supply and demand exist in a dynamic relationship that evolves over time and interacts with local circumstances.

The goal of this project is to build a dynamic model of labour supply in the Thunder Bay district. The proposed activities will be grounded in Complex Adaptive Systems Theory and is informed by the Regional Human Resources Strategy which was developed by a previous partnership of the NSWPB. The Project will not only develop a model for understanding the dynamic relationship between labour supply and demand but also provide local workforce stakeholders with practical strategies and tools for promoting a stronger alignment between the demand and supply of labour within the regional workforce.

This Project represents a potentially ground-breaking application of complexity theory for understanding a community's labour supply. It can benefit workers by providing a compelling source of information that increases their connectedness with the community and potential employers. It can also be helpful to the Community Economic Development Office to support recruiting employers to Thunder Bay.

This priority for our community/district was first identified in 2012-2013 through the community engagement partnership of Think Globally/Act Locally which has received continuous and growing support from stakeholders to work towards a comprehensive database and understanding of labour supply with ultimate goal of better matching supply to demand and employment opportunities. This proposed partnership aligns with evidence of labour force shortages as well as unemployment and participation rates and skill mismatch locally reported to us by employers.

NSWPB Mission Statement:

Connecting community partners to improve the quality of life in our communities through workforce development.

The North Superior Workforce Planning Board will:

- Build a strategic workforce readiness plan
- Create a dynamic, responsive process to satisfy current needs and prepare people for emerging labour market opportunities within a global economy
- Leverage community alliances to maximize labour market capacity and competitiveness.

Project Outcomes:

Expected outcomes are achieved through following recommended actions within each of the following three components.

- 1. *Compiling Existing Labour Supply Data:*** This project will collect the data of disparate stakeholders through formal and informal networks and build a structure for visualizing what the data tells us about the labour supply. The North Superior Workforce Planning Board will act as a hub to a wider community of workforce stakeholders with an interest in the data. Increasing the access to good labour supply data increases the likelihood that workforce stakeholders will actually communicate with each other to better promote alignment between the needs of those who want to engage in paid employment and those sectors that have work to offer. Providing the community with credible, accessible labour supply data increases the frequency and quality of inter- and intra-agency feedback and promotes strong consensus about shared solutions.

Expected Outcomes:

- An established network of supply data; ?
 - A comprehensive database of district's labour supply;
 - infrastructure for data management, consolidation and reporting, reporting procedures, timelines and proposed format.
- 2. *Mapping the Labour Supply as a Social Network:*** To develop a dynamic model of the labour supply, the project will begin with the development of an online survey and database of individual workers that will include specific information such as training and past employment as well as connections (links) to other workers and entities (businesses, organizations) in the system. People will be able to update their information regularly, and these updates will be tracked in the database.

Expected Outcomes:

- This data will enable us to map, through social network visualization¹ tools such as Gephi², movement within the labour supply, individual connectedness within the network, and the emergence of clusters of specialization in the labour supply, and how these connect with levels and types of employment across and within sectors.

3. Developmental Evaluation (DE) is presented as an approach for evaluating innovations, such as NSWPB's Regional HR Strategy which applies complexity theory in looking at the workforce as a complex adaptive system. Since the Regional HR Strategy and its resulting partnerships (1 and 2 above) is the creation of a new strategy, it is proposed to utilize this evaluation method to track the evolution of the projects as well as the outcomes.

Priority and Alignment: Upon identification of our Regional HR Strategy being the first of its kind in the province, country and OECD (Organization for Economic Cooperation and Development – consortium of developed countries) it is imperative that we chronicle the projects' progress and evaluate its components and overall success to assist us in the completion of the projects as well as report on the effectiveness or success of the projects and to act as a template for other areas to pursue if warranted.

Expected Outcomes: DE enhances the development, testing, refinement and quality of potential solutions and is well suited to the Regional HR Strategy which is being explored and created for the first time. DE provides real-time data and feedback to help develop and adapt an intervention as it unfolds. This will provide an evaluation of the Compiling Existing Labour Supply Data project and the Mapping the Labour Supply as a Social Network project.

Members / Composition

Executive Committee:

NSWPB Board of Directors

Madge Richardson – Executive Director, NSWPB

Karla Commisso – Project Lead, NSWPB

¹ http://en.wikipedia.org/wiki/Social_network_analysis

² <https://gephi.github.io/>

Project Steering Committee:

Representation on the Project Steering Committee is expected from employers, service providers and indigenous communities and will be formalized and responsive as we move forward.

As of its inception, the Project Steering Committee is comprised of the following community stakeholders:

Anna Nelson, Lutheran Community Care Centre
Annemarie Wesolowski, Executive Director, Literacy Northwest
Carolyn Dowdell, March of Dimes
Dave Farrell, Co-Chair, NSWPB
Debra Johnson,
Dr. Connie Nelson, Lakehead University
Dr. Mirella Stroink, Lakehead University
Frank Pullia, Director, NSWPB
James Anderson, Northwest Local Health Integration Network
John Mason, Thunder Bay Community Economic Development Commission
John DeGiacomo, Anishinabek Employment and Training Services
Justin Scott, Thunder Bay Community Economic Development Commission
Kari Jefford, Unifor 229
Louise Marcil, Northwest Employment Works
Mandy Price, Anishinabek Employment and Training Services
Rebecca Johnson, Councillor At Large, City of Thunder Bay
Stewart Kallio, Kallio Consulting
Tracy Roblin, Northwest Employment Works
Wendy Koehler, YES Employment Services
Yolanda Wanakamik, Lakehead University

Term of Membership

For duration of the project – April 1, 2014 – March 31, 2016. Renewable annually.

Formation Details

The Project Steering Committee was formed in April/May, 2014 and includes the Executive Director and Project Lead, North Superior Workforce Planning Board. It is deemed critical to the success of the project.

Members of the ***Project Steering Committee*** were recruited primarily for their knowledge of Complexity theory and desire to apply the theory as a lens to view the labour force as a complex adaptive system. This innovative approach to establishing a regional human resources

strategy will be the first time in this application and as such we recommend conducting Developmental Evaluation on the strategy components throughout the process.

The ***Project Steering Committee*** reports to the Executive Committee. Final decisions rest with the North Superior Workforce Planning Board of Directors. Should changes or timelines or budget be required, the Executive Director, North Superior Workforce Planning Board, will be responsible for communicating these changes to NSWPB's Board of Directors and submitting a request to the project funder for approval, prior to moving forward.

Committee Chair:

For practical purposes, the Executive Director of NSWPB or a designate will chair the meetings. The role of the Chair is to facilitate discussion based upon the agenda topics and to ensure that all Project Steering Committee members are provided the opportunity to be actively engaged in the business of the meeting. The Chair will exercise decision making as needed for the Project Steering Committee to achieve consensus.

Roles and Activities of the *Project Steering Committee*:

The ***Project Steering Committee*** will work together to provide direction and/or make decisions related to project activities, tools and resources, and timelines.

The ***Project Steering Committee*** may also be called upon to offer input and guidance to project contractors on other project components such as project work plans, time lines and troubleshooting with respect to completing project deliverables.

This ***may include*** involvement in areas such as:

- External communication and outreach to relevant stakeholders;
- Input to survey development and development of summary findings (as required);
- Review of draft documents and guidance re: content, layout, format and use;
- Participation in the project evaluation process is a mandatory requirement.

Committee Communication and Meetings:

Meetings will take place in the boardroom of NSWPB and will accommodate teleconference participation on an as-needed basis (3-6 meetings over the life of the project component) budget permitting. Members will be consulted regarding the scheduling of meetings and provided with meeting agendas and materials in advance of all meetings. It is expected that meetings will be 90-120 minutes in duration.

All communication will be done via in-person, audio conferencing and email. Those involved in the project are responsible for regularly checking their email, meeting schedules, roles/responsibilities chart or action items and all other documents to support their full participation.

Communications regarding the project's progress and status will be provided by the Executive Director, NSWPB and/or the Project Lead. **Project Steering Committee** communication will be conducted, for the most part, by email and by phone.

Decision Making:

Decision making will be by consensus allowing for dialogue until a point of understanding and agreement is reached. By consensus we mean that everyone has the opportunity to express their opinions and the will of the group is evident. If there is an impasse, the **Project Steering Committee** will defer to the Chair/NSWPB Executive Director for a final decision. The **Project Steering Committee** will also confer with the NSWPB Executive Director on any issues that arise that may need broader discussion.

Committee Support:

NSWPB will provide full administrative support to the **Project Steering Committee** in terms of coordinating committee meetings and other external meetings, committee activities, conducting research and providing all information required for decision making, and preparing documentation as a result of committee work and activities.

All approved costs associated to **Project Steering Committee** participation will be incurred by NSWPB which will be subject to project objectives and budgetary constraints.

Appendix 8: Agenda and Minutes from June 23 meeting



North Superior
Workforce Planning Board

Regional HR Strategy Focus Group

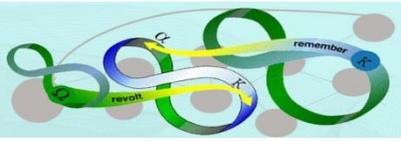
Monday, June 23rd, 2014

2:00 p.m. – 4:00 p.m.

NSWPB Boardroom

MEETING AGENDA

- I.** Welcome and roundtable introductions
- II.** Review of NSWPB Partnership
- III.** Focus Group Approach
 - vii) Notes from initial meeting of June 9th
 - viii) Focus Group Terms of Reference – incorporating core values and principles of importance to group members on 9th – bring draft back to group at next meeting
 - ix) How do we accomplish the goals (feedback loops, pattern detection, visualization of churn in labour market)?
 - x) Membership – any missing community partners?
 - xi) Timeline – how often should we meet? Next steps?
Regional HR Strategy Focus Group and 360 Group
Guest speakers
NSWPB Community Connections & Board
Development (October and November)
- IV.** Next Meeting Date
- V.** Adjournment



Date: June 23th, 2014
Time: 2:00 p.m. – 11:30 p.m.
Location: NSWPB Boardroom

Regional Human Resources Strategy Focus Group Meeting

Present: Mirella Stroink, Madge Richardson, Yolanda Wanakamik, Stewart Kallio, Frank Pullia, James Anderson, Junlin Li, Wendy Koehler, Karla Commisso, John DeGiacomo, John Mason, Justin Scott, David Farrell, Connie Nelson

Regrets: Louise Marcil, Rebecca Johnson, Suanne White



1. Welcome
2. Attendance: as above
3. Welcome and Background summary
<p>1) M. Richardson welcomed all focus group members and introduced the project background.</p>
4. Discussions
<p>M.Stroink:</p> <p>What is Complexity?</p> <ul style="list-style-type: none"> • <i>Complexity Science</i>: A term inclusive of many related theories coming from different disciplines <ul style="list-style-type: none"> • E.g., Chaos theory, Dynamic Systems Theory, Fractal Geometry • Physics, economics, biology, ecology, math • Sharing a common perspective and key concepts • Seeing phenomena as <i>Complex Systems</i> • “Systems Thinking” as a perspective that can be applied to a number of issues <p>What is a Complex System?</p> <ul style="list-style-type: none"> • A group of interacting elements forming a complex whole • A collection of individual agents, who have the freedom to act in unpredictable ways, and whose actions are interconnected such that one agent’s actions changes the context for other agents. <p>Some Complex Systems</p> <ul style="list-style-type: none"> • Examples of Complex Systems? <ul style="list-style-type: none"> • Termite colonies, stock markets, the internet, gardens, human beings, groups of people... <p>Network visualization of a LinkedIn Profile</p>

Complex Systems Form Patterns

- The system as a whole forms into patterns that are not obvious from the behaviour of the individuals within the whole.
- These patterns are not designed or planned but arise spontaneously from the interactions among the people (and organizations) in the system

Complex Systems Adapt and Learn

- Complex systems actively adapt to their environment and learn from experience through feedback loops.
- A complex system with tight feedback loops is more responsive to its environment

5. Next Meeting: Monday, July 28th, 2014 at 9:30 a.m. – 11:00 a.m.

6. Meeting adjourned at 11:50 am



Regional HR Strategy Focus Group

July 28, 2014

9:30 a.m. – 11:30 a.m.

NSWPB Boardroom

MEETING AGENDA

- I.** Welcome and roundtable introductions
- II.** Review of NSWPB Partnership
- III.** Crowd-Sourcing Activity
 - i. What is needed
 - ii. Where can info. Be found/gathered
 - iii. How, Who, When
- IV.** Next Meeting Date
- V.** Adjournment

Regional Human Resources Strategy

Focus Group Meeting

Minutes from July 28, 2014

Present: Mirella Stroink, Madge Richardson, Yolanda Wanakamik, Stewart Kallio, Frank Pullia, Junlin Li, Wendy Koehler, John Mason, Justin Scott, David Farrell, Mandy Price

Regrets: Annemarie Wesolowski, Joyce Hunter

1. Welcome

2. Attendance: as above

3. Welcome and Agenda Overview

- 1) M. Richardson spoke to documents distributed to the group concerning Conceptual Framework for the Regional HR Strategy with the ultimate goal of matching labour force demand and supply. The Conceptual Framework outlined known and/or confirmed sources of data on the Supply and Demand for labour in the region. It also included a statistical diagnostic tool developed by the Organization for Economic Cooperation and Development (OECD) which helps to understand the balance between skills supply and demand within local labour markets. According to this methodology, local economies can fall into four different categories: low skills equilibrium; skills gaps and shortages; skills surplus and high skills equilibrium.

This tool can provide our group and policy makers with important information on the relationship between supply and demand, which can inform place-based policy approaches at the local level. It can also help in determining whether certain areas may experience skills mismatches.

To assist us in developing a regional HR strategy, it is important for us to be aware of what information we have access to at the present time on either the supply or demand side of the labour market and information we feel that is lacking on either side or that we believe we need to have to have a complete picture. At that point we may then identify gaps between what we know and have access to and what we need to know. In turn we will identify sources of or strategies to obtain the required information, identify recent trends observed in addition to issues and/or items that we will need to be aware of and/or consider during the development of the strategy. (Please note that all of the items identified during the crowd-sourcing exercise have been listed in random order under sections entitled Who, What, Where, When, Why and Considerations / trends to be aware of.

4. Crowd-Sourcing Activity

The focus group members were asked to identify sources of supply statistics that are not known at this time. The group did not discuss the merits of items as they were identified, rather, they requested to receive a list of items as they were identified in random order and a discussion on item merit and prioritization of items will be completed at our next meeting.

Focus Group members are requested to review the list and check off the priorities in each section, from their perspective, that they would like to see tackled first and foremost. The following is a random listing of items identified during our crowd-sourcing activity:

WHAT is needed:

- School boards (public, separate, French, DFC, etc.) – number of graduates
 - % of graduates stay here upon graduation
 - % or # of students came here for education and will return to their home communities
- Colleges and universities – number of graduates
 - % of graduates stay here upon graduation
 - % or # of students came here for education and plan to return to home communities
- Alumni associations
- National Occupation Classification Codes – NOC Codes – task summary – overview of what is required
- Core competencies – social service
- Tacit skills / employability
- Essential skills
- What skills are hard to find
- Essential skills (PEAC and OECD data) (Reading skill supply – study 2 yrs. Old – Stewart)
- Transferrable skills
- Out of province
- Experienced but no certification
- Time in workforce – new metric
- High skilled supply underemployed or not working – what can we attract for this supply
- Indigenous knowledge transfer / experts
- Aboriginal numbers (Matawa, FWFN, Nokiiwin Tribal Council, NAN)
- Aboriginal community / communities
- Employment service providers' agencies – standardized survey through them – overview of people looking for work
- Agencies that statistics are unknown – John Howard Society, Elizabeth Fry Foundation for example
- Graduates / completions of Literacy and Basic Skills programs
- Demographics of clients served by Employment Ontario and Aboriginal Skills, Employment and Training service providers: (EO:NEW, YES; ASET: AETS, KKETS,

FWFN)

- Demographics of Ontario Works and/or Ontario Disability Support Program participants
- Apprenticeships – outside of EO data – is it available locally from MTCU?

WHERE can information be found/gathered:

- Human Resources departments – parallel, make statement

HOW:

- Presently employed but would move (underemployed) – survey of our own
- People – individuals – PILOT
- Social media – potential people looking for work
- Bigger employers – could we capture information / survey their employees (cross section sectors)
 - Local scale – more moderated and reliable
 - Public but not all information public
- Pilot / study – on-line discussion?
 - Facebook or LinkedIn – survey monkey
 - Elements – who, how, questions we want to ask
 - Live time – tight feedback loop – Key Performance Indicator (KPI)
- Identify population subsets: working, out of town, essential skills, who is looking for work (not just post-secondary completion)

FOR CONSIDERATION:

- Survey sampling – visually show churn within the labour market/workforce that will show movements
 - Weight of lines (thicker/thinner) indicate critical/dependence of connections
- Connections / networks – shadow system
- Power of influence (outside)
- 4 generations now in the workforce
- LOCAL INFORMATION
- Continuous data collection!
- Human capital – employees as assets – Return on Investment (ROI)
- What to add to supply and demand – jump off point
- Turnover
- Recruiting practices in companies – out of our control
- Aware of these initiatives – awareness

WHO:

- Full Regional HR Strategy Focus Group

- Smaller working groups

WHEN - prioritized timeline:

5. Next Meeting: Monday, July 28th, 2014 at 9:30 a.m. – 11:00 a.m.

6. Meeting adjourned at 11:50 am



North Superior
Workforce Planning Board

Regional HR Strategy Focus Group

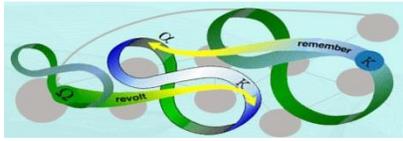
Wednesday, August 13th, 2014

1:00 p.m. – 3:00 p.m.

NSWPB Boardroom

MEETING AGENDA

- I.** Welcome and roundtable introductions
- II.** Minutes of July 28th meeting
- III.** Next Steps in Developing the Strategy
 - xii) Confirm and/or clarify items noted on July 28th
 - xiii) Priorities
 - xiv) Moving Forward (NSWPB's Local Labour Market Plan)
 - xv) Membership – any missing community partners?
 - xvi) Terms of Reference
- IV.** Next Meeting Date
- V.** Adjournment



Date: August 13th, 2014
Time: 1:00 p.m. – 3:00 p.m.
Location: NSWPB Boardroom

Regional Human Resources Strategy Focus Group Meeting

Present: Mirella Stroink, Madge Richardson, Stewart Kallio, Frank Pullia, Karla Commisso, Junlin Li, Wendy Koehler, John Mason, Justin Scott, David Farrell, Mandy Price

Regrets: Annemarie Wesolowski, Joyce Hunter, Yolanda Wanakamik, James Anderson, Tracy Roblin, Louise Marcil

1. Welcome
2. Attendance: as above
3. Welcome and Agenda Overview
<p>1) The Conceptual Framework for the Regional HR Strategy handout circulated on July 28th was further discussed.</p> <ul style="list-style-type: none"> ▪ This partnership is coming to the end – was to be completed in first 2 quarters of 2014-2015 so April – September ▪ To complete this NSWPB deliverable we will require: <ul style="list-style-type: none"> ▪ Strategy ▪ Prioritized Projects or initiatives identified in the strategy will be included in our 2015-2016 Local Labour Market Plan ▪ MTCU is encouraging planning boards to bring forward multi-year plans where applicable ▪ Request that the strategy and recommended projects be finalized by the Regional HR Strategy group prior to our community consultation scheduled for September 3/14 ▪ Suggested that our group prepare a one-page synopsis of the project and its process and the use of the complexity theory as a lens to view the labour force as a complex adaptive cycle (Stewart and Mirella to draft) <p>We'll have a 2-pronged approach to our Regional HR Strategy (as per Mirella's notes – hers are more detailed here than mine)</p>
4. Prioritization of brainstormed items
<ul style="list-style-type: none"> ▪ Gephi as possible tool for networks, connections visualization ▪ Different filters – what questions to ask, what differentiates (trends)

- Individuals – perhaps compare 12 dimensions (male/female, lived here, length of time, experience)
- Build database
- Start surplus and shortage comparison in sectors identified within our labour market analysis – what’s different between the 2
- Newcomers
- Tool that scans resumes (Ministry scans for usage of buzz words – count times used in their selection process)
- Some of small regional communities prepared database in their adjustment program (Marathon)
- Other communities have developed as well through Investment Readiness program (Greenstone, Atikokan)
 - Mike Dunlop, MNDM – investment readiness program officer – Thunder Bay possible?
 - Compare with regional communities that have gone through IR (MNDM funded)
 - Supply / demand now (not in the past)
- OECD balance quadrant included in the conceptual framework handout
 - Aligning supply and demand
 - According to Thomas Townsend – Regional HR strategy has not been done before
 - Stated in report Think Globally – Act Locally
 - Plus focus on cutting edge of approach
- Bombardier – hired +700
 - From where
 - What skills
- If Toyota wanted to build a plant here- do we have labour supply to work the plant?
- What information is given to companies that call CEDC? (labour supply questions) – can help us identify gaps of information we may be able to gather in this strategy
- How many local people are applying for mining jobs that are being posted weekly?
 - John Mason to ask mining companies if NW applicants are being hired
 - Madge to ask employment service providers to start tracking numbers of clients they assist in applying for the mining jobs
 - How many people apply from posting in the resource centre
- Vernon Ogima – Fort William First Nation – sub-set or community as pilot
 - John DeGiacomo – AETS –
 - Grow North – one of the pillars
 - MTCU, Government, Community would benefit from the intelligence and database
- How would OECD matrix change once we apply our approach?
- Studies referenced by Chander Shahi re Nobel Prize awarded re matching
- Map other methodologies – social etc.
- More members for the HR Focus Group as we move forward (members of this initial group will be invited and encouraged to participate in the projects and other initiatives resulting from this partnership)
- Alumni associations

Discussion was held on final meeting for this group in early October

- Celebration of group effort on the project
- Wrap-up meeting – invite Thomas Townsend to participate via teleconference

5. Next Meeting: Thursday, October 2nd from 1:00 p.m. – 3:30 p.m.

6. Meeting adjourned at 3:00 p.m.

Appendix 11: HR Strategy Project Timeline

1. Building a labour supply knowledge network

North Superior Workforce Planning Board (NSWPB) will nurture the formation of a living knowledge network of people and organizations who are stakeholders in labour supply. A framework of inquiry will also be developed through which we can query this network regarding different aspects of the labour supply. Processes will also be developed to manage, consolidate, and regularly share knowledge with the network. Thus, the project will enhance the exchange and use of the full diversity of labour supply information that is already available.

	2015												2016											
	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Terms of Reference																								
RFP & Awarding of Contract																								
Develop Infographic/Powerpoint																								
Gather Founding Partners																								
Literature review																								
Data sources																								
What can the data tell us about labour supply (what's possible to know)?																								
What do we need to know about our local labour supply?																								
How do we query and organize our local labour supply data to inform the Regional HR Strategy?																								
Engagement																								
Identify community stakeholders - who will need/use the data?																								
Identify existing data sources - who has the data we need?																								
Identify new/emerging data sources - who is generating new or emerging data that we can use?																								
LLMP Consideration																								
Framework of Inquiry																								
Develop data queries - organize and focus what the data tells us about our local labour supply																								
Describe labour supply themes/patterns - potentially "stories" or "narratives"																								
Test the presentation, usage, coherency of data sets - is it useful?																								
Revise and/or add data based on testing																								
Explore/Identify population subsets related to "Mapping Labour Supply as a Social Network"																								
Developmental Evaluation Feedback Meetings																								
Communication																								
Develop communication protocols - how do we communicate labour supply information with community stakeholders?																								
Final Product																								

2. Mapping the labour supply as a social network

The goal of this project is to develop the capacity to map or visualize the workforce as a dynamic system using social network visualization and analysis tools. This technique enables us to view the workforce as a network of individual people who form connections with other people as they move through training and work experiences over time.

	2015												2016											
	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Terms of Reference																								
RFP & Awarding of Contract																								
Literature review																								
How has complex adaptive systems (CAS) theory been applied in related contexts?																								
How are social networks mapped across populations (principles, tools)																								
Issues involved in collecting data about individuals																								
LLMP Consideration																								
Survey Development																								
Conduct focus group sessions to inform:																								
• Who is served																								
• How to access the survey respondents																								
• Key research focus for the survey																								
•																								
Identify characteristics of survey population (who do we survey?)																								
• Population comprised of "human systems"																								
Identify how to access survey population (how do we contact our respondents?)																								
Identify survey population "markers" (What are the key individual characteristics that we need to map?)																								
Develop an online survey methodology																								
Develop a protocol for updating survey responses																								
Network Management																								
Build an database infrastructure to collect and track survey responses																								
• Consider how this aligns with the architecture for the parallel project "Compiling Existing Labour Supply Data"																								
Conduct a small pilot survey																								
• Informs revisions to survey design and collection																								
Pilot the "Labour supply as a social network" in a specific sector or community (i.e., Fort William first nation																								
Map the "Labour Supply as a Social Network" using social network visualization tools																								
Communication																								
Develop communication protocols - how do we communicate "Labour Supply as a Social Network" with community stakeholders?																								
Developmental Evaluation Feedback Meetings																								
Final Product																								

3. Developmental Evaluation

This is presented as an approach for evaluating innovations, such as NSW/PB's Regional HR Strategy which applies complexity theory in looking at the workforce as a complex adaptive system. Since the Regional HR Strategy and its resulting partnerships (1 and 2 above) is the creation of a new strategy, it is proposed to utilize this evaluation method to track the evolution of the projects as well as the outcomes.

	2015												2016											
	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Marketing																								
Registering Participants																								
Establish Steering Committee (for projects 1, 2 & 3)																								
Terms of Reference																								
RFP & Awarding of Contract																								
Reaffirm expected outcomes																								
Establish Provisional indicators																								
D.E Course (Part 1 - Complexity Theory 12 hours																								
D.E Course (Part 2 - Developmental 12 hours																								
Ongoing Project Consultation																								
LLMP Consideration																								
Formal Project Feedback																								
Final Report																								

Appendix 12: HR Strategy living Terms of Reference as of February 25, 2015



Terms of Reference

Regional HR Strategy

Official Name: NSWPB Approved Partnership - Regional HR Strategy

This Terms of Reference is a living document subject to review and revision as the project evolves.

Project Purpose:

A key economic dimension of any community workforce is the alignment between the needs of those who hold or are seeking to hold paid employment (supply) with those sectors that have employment to offer (demand). The labour supply describes both the number of people able to engage in paid employment and the skills, training and credentials they bring to the workforce. The labour demand describes the locally available jobs and the specific skills training and credentials needed to competently perform that work. Effective alignment recognizes that labour supply and demand exist in a dynamic relationship that evolves over time and interacts with local circumstances.

The purpose of this project is to mobilize new knowledge of the workforce to better align labour supply with labour demand. The proposed activities will be informed by the Regional Human Resources Strategy¹, which was developed by a previous partnership of the NSWPB, and is grounded in Complex Adaptive Systems theory. The goals of this project are (1) to develop the capacity to accurately observe and analyse the real-time dynamics of the workforce², and (2) to mobilize the resulting knowledge by providing a strong network of workforce stakeholders with relevant and practical information, insight, and strategies to better align labour supply and demand.

¹ Region refers to the geographic area covered by the North Superior Workforce Planning Board

² *Real-time dynamics* refers to the movement and change occurring within the workforce, as it happens.

There will be far-reaching **benefits** of achieving the *Regional HR Strategy's* goals. People who are marginalized and under-employed may have ways to better connect with the community. The community organizations that support them may be better equipped with the knowledge, strategies, and tools they need to anticipate changes and trends in the workforce. Employers will have access to a compelling source of information regarding the training, experience, and potential of the workforce. The Offices of Community Economic Development and other agencies can bolster their efforts to recruit new employers to the region. Networks of people throughout the social system will be strengthened in their connectedness.

This priority for community/district was first identified in 2012-2013 through the community engagement partnership of Think Globally/Act Locally and has received continuous and growing support from stakeholders to work towards a comprehensive understanding of labour supply with the ultimate goal of better matching supply to demand and employment opportunities as they arise. This proposed partnership aligns with evidence of labour force shortages as well as unemployment and participation rates and skill mismatch locally reported to us by employers.

NSWPB Mission Statement:

Connecting community partners to improve the quality of life in our communities through workforce development.

The North Superior Workforce Planning Board will:

- Build a strategic workforce readiness plan
- Create a dynamic, responsive process to satisfy current needs and prepare people for emerging labour market opportunities within a global economy
- Leverage community alliances to maximize labour market capacity and competitiveness.

Project Outcomes:

Expected outcomes are outlined in the following three components to be achieved through following recommended actions within each component.

- 1. *Building a Labour Supply Knowledge Network:*** This project will begin by building a network of people and organizations who hold knowledge and information relevant to the district labour supply. These organizations each hold information and data relevant to certain aspects of the labour supply, but this information is rarely shared. By forging bonds of trust and collaboration among these organizations, the project will enhance the exchange and use of the full diversity of labour supply information and data that is already available.

The North Superior Workforce Planning Board will act as a hub in this knowledge network, facilitating network gatherings and creating the conditions through which it will be possible to query the network regarding the status of different aspects of the labour supply. Thus, in addition to building this network, the project will involve developing a framework of inquiry

through which all network members will be better able to access the labour supply information they need.

This project will increase access to good labour supply data, and by fostering connections among workforce stakeholders, it will promote alignment between the needs of those who want to engage in paid employment and those sectors who have work to offer. Providing the community with credible, accessible labour supply data increases the frequency and quality of inter- and intra-agency feedback and promotes strong consensus about shared solutions.

Expected Outcomes:

- A collaborative network of labour supply stakeholders and knowledge holders;
- A framework of inquiry through which the network can be queried;
- A comprehensive network of knowledge regarding the district's labour supply;
- Infrastructure for managing, consolidating, and reporting district labour supply knowledge.
- Increased capacity to understand the patterning of labour supply over time

- 2. *Mapping the Labour Supply as a Social Network:*** The goal of this project is to develop the capacity to map or visualize the labour supply as a dynamic system. To develop this capacity, the current project involves preparing and conducting a pilot study that will test an approach to mapping the labour supply with a sample of approximately 200 individuals in Thunder Bay district. The project will begin with the development of a website and mobile application through which individuals can enter and maintain a profile that includes current information on their demographics, past training, past and current employment. It will also include information on their connections (links) to other individuals and entities (businesses, organizations) in the project.

The website and app will be professionally designed and easy to use with a recognizable and contemporary visual identity. Individuals in the project will be able to update their information with ease and will also be queried regularly by the project team to provide specific information and updates. The incoming information will be managed in a secure and confidential manner. Data will be entered into a social network visualization³ tool such as Gephi⁴, and the project team, working with the NSWPB, will explore the possibilities associated with mapping the labour supply as a social network. Maps can be generated and analyzed that reveal various types of connection among individuals in the project, clusters they form, and their movement over time through the workforce. Network statistics can also be generated by the software, such as the connectedness of each individual in the

³ http://en.wikipedia.org/wiki/Social_network_analysis

⁴ <https://gephi.github.io/>

network. Maps and statistics will be analyzed and explored with the NSWPB to reveal new directions of inquiry.

This project is the first known effort to map the labour supply as a complex or dynamic system. It is also unique for viewing the labour supply as a network of individual people, moving over time through the formation and maintenance of connections pertaining to labour and training. Being able to visualize the labour supply as a patterned whole that is formed through the interconnectedness of people is a major strength of this project, and a marked alternative to the broad, group-level statistics that are currently available.

Expected Outcomes:

- A new lens for viewing the labour supply, important metrics regarding the state and movement of the labour supply.
- The capacity to map movement within the labour supply, assess connectedness within the network, and observe the emergence of clusters of specialization in the labour supply.
- A platform and project identity that can be expanded to analyze a larger sampling of the labour supply network.

3. *Developmental Evaluation (DE)* is presented as an approach for evaluating innovations, such as NSWPB's Regional HR Strategy which applies complexity theory in looking at the workforce as a complex adaptive system. Since the Regional HR Strategy and its resulting partnerships (1 and 2 above) is the creation of a new strategy, it is proposed to utilize this evaluation method to track the evolution of the projects as well as the outcomes.

Priority and Alignment: Understanding the innovative approach of our Regional HR Strategy it is recommended that Developmental Evaluation chronicle the projects' progress and evaluate its components and overall success to assist us in the completion of the projects as well as report on the effectiveness or success of the projects and to act as a template for other areas to pursue if warranted.

Expected Outcomes: DE builds a learning culture within the organization leading the project allowing it to evolve alongside the outcomes. It enhances the development, testing, refinement and quality of potential solutions and is well suited to the Regional HR Strategy which is being explored and created for the first time. DE provides real-time data and feedback to help develop interventions and adapt as the project unfolds. This will provide an evaluation of the Compiling Existing Labour Supply Data project and the Mapping the Labour Supply as a Social Network project.

Members / Composition

Executive Committee:

NSWPB Board of Directors

Madge Richardson – Executive Director, NSWPB

Karla Commisso – Acting Project Lead, NSWPB

Project Steering Committee:

The ***Project Steering Committee*** is committed to diverse representation of the region and will include Indigenous and non-Indigenous community members, employers and service providers. Membership will be fluid and responsive as we move forward.

As of its inception, the ***Project Steering Committee*** is comprised of the following community stakeholders that have shown interest and participated in the preliminary stage:

Anna Nelson, Lutheran Community Care Centre

Annemarie Wesolowski, Executive Director, Literacy Northwest

Carolyn Dowdell, March of Dimes

Dave Farrell, Co-Chair, NSWPB

Dr. Connie Nelson, Lakehead University

Dr. Mirella Stroink, Lakehead University

Frank Pullia, Director, NSWPB

James Anderson, Northwest Local Health Integration Network

John Mason, Thunder Bay Community Economic Development Commission

John DeGiacomo, Anishinabek Employment and Training Services

Justin Scott, Thunder Bay Community Economic Development Commission

Karla Commisso, NSWPB

Madge Richardson, NSWPB

Mandy Price, Anishinabek Employment and Training Services

Stewart Kallio, Kallio Consulting

Wendy Koehler, YES Employment Services

Yolanda Wanakamik, Lakehead University

Term of Membership:

For duration of the project – April 1, 2014 – March 31, 2016. Renewable annually.

Formation Details:

The Project Steering Committee was formed in April/May, 2014 and includes the Executive Director and Project Lead, North Superior Workforce Planning Board. It is deemed critical to the success of the project.

Members of the ***Project Steering Committee*** were recruited primarily for their knowledge of complexity theory and desire to apply the theory as a lens to view the labour force as a complex adaptive system. The ***Project Steering Committee*** invites membership from persons interested in contributing to this project.

The ***Project Steering Committee*** reports through the Executive Committee to the NSWPB. Should changes or timelines or budget be required, the Executive Director, North Superior Workforce Planning Board, will be responsible for communicating these changes to NSWPB's Board of Directors and submitting a request to the project funder for approval, prior to moving forward.

Decision Making:

Decision making will be by consensus allowing for dialogue until a point of understanding and agreement is reached. By consensus we mean that everyone has the opportunity to express their opinions and the will of the group is evident. If there is an impasse, the ***Project Steering Committee*** will defer to the Chair/NSWPB Executive Director for a final decision. The ***Project Steering Committee*** will also confer with the NSWPB Executive Director on any issues that arise that may need broader discussion.

Committee Chair:

For practical purposes, the Executive Director of NSWPB or a designate will chair the meetings. The role of the Chair is to facilitate discussion based upon the agenda topics and to ensure that all Project Steering Committee members are provided the opportunity to be actively engaged in the business of the meeting. The Chair will exercise decision making as needed for the Project Steering Committee to achieve consensus.

Roles and Activities of the *Project Steering Committee*:

The ***Project Steering Committee*** will work together to provide direction and/or make decisions related to project activities, tools and resources, and timelines.

The ***Project Steering Committee*** may also be called upon to offer input and guidance to project contractors on other project components such as project work plans, time lines and troubleshooting with respect to completing project deliverables.

This ***includes*** involvement in areas such as:

- External communication and outreach to relevant stakeholders;
- Input to survey development and development of summary findings (as required);

- Review of draft documents and guidance re: content, layout, format and use;
- Participation in the project evaluation process.

Committee Communication and Meetings:

Meetings will take place in the boardroom of NSWPB and will accommodate teleconference participation on an as-needed basis (approximately 6 meetings annually) budget permitting. Members will be consulted regarding the scheduling of meetings and provided with meeting agendas and materials in advance of all meetings. It is expected that meetings will be 90-120 minutes in duration.

All communication will be done via in-person, audio conferencing and email. Those involved in the project are responsible for regularly checking their email, meeting schedules, roles/responsibilities chart or action items and all other documents to support their full participation.

Communications regarding the project's progress and status will be provided by the Executive Director, NSWPB and/or the Project Lead. ***Project Steering Committee*** communication will be conducted, for the most part, by email and by phone.

Committee Support:

NSWPB will provide full administrative support to the ***Project Steering Committee*** in terms of coordinating committee meetings and other external meetings, committee activities, conducting research and providing all information required for decision making, and preparing documentation as a result of committee work and activities.

All approved costs associated to ***Project Steering Committee*** participation will be incurred by NSWPB which will be subject to project objectives and budgetary constraints.

Appendix 13: Project promotion document

PEOPLE FIRST: A NEW IMAGE OF THE NORTH SUPERIOR WORKFORCE Three projects of the Regional Human Resources Strategy

The *Regional HR Strategy*¹ is a collaborative venture of the North Superior Workforce Planning Board (NSWPB). The **purpose** of the Regional HR Strategy is to mobilize current and emerging knowledge of the workforce to better align labour supply with labour demand. We have strong support from diverse partners; our aim now is to raise funds locally in order to leverage provincial and federal matching funds. With this funding, the Regional HR Strategy will become a significant driver of economic growth and enhanced well-being in this region.

The **goals** of the *Regional HR Strategy* are to (1) develop the capacity to accurately observe and analyse the real-time dynamics of the workforce², and (2) to mobilize the resulting knowledge by providing a strong network of workforce stakeholders with relevant and practical information, insight, and strategies to better align labour supply and demand.

There will be far-reaching **benefits** of achieving the *Regional HR Strategy's* goals. People who are marginalized and under-employed will have ways to better connect with the community. The community organizations that support them will be better equipped with the knowledge, strategies, and tools they need to anticipate changes and trends in the workforce. Employers will have access to a compelling source of information regarding the training, experience, and potential of the workforce. The Offices of Community Economic Development and other agencies can bolster their efforts to recruit new employers to the region. Networks of people throughout the social system will be strengthened in their connectedness.

Labour supply refers to the skills and energy of people. Labour demand refers to the need for these skills in relation to people's activities. Thus, labour supply and demand are both the products of people's interactions with each other and with their environments over time. They change constantly as they adapt to complex and dynamic interactions scaling from the local to the global. With this awareness of the complexity of labour supply and demand, it is clear that we need a way to represent the workforce that begins with people and their interactions. To this end, we have adopted the theoretical lens of complexity theory³.

We have developed 3 interrelated projects in pursuit of these goals, as described below.

(1) *Building a labour supply knowledge network*: There are many organizations that hold specialized knowledge relevant to the labour supply, but this information is rarely shared. Through a process of building trust and collaboration, the North Superior Workforce Planning Board (NSWPB) will nurture the formation of a living knowledge network of people and

¹ Region refers to the geographic area covered by the North Superior Workforce Planning Board

² *Real-time dynamics* refers to the movement and change occurring within the workforce, as it happens.

³ *Complexity theory* refers to the collection of scientific theories that deal with phenomena that emerge through the interactions of many components. Examples include human communities, ecosystems, the economy, and the brain.

organizations who are stakeholders in labour supply. A framework of inquiry will also be developed through which we can query this network regarding different aspects of the labour supply. Processes will also be developed to manage, consolidate, and regularly share knowledge with the network. Thus, the project will enhance the exchange and use of the full diversity of labour supply information that is already available.

(2) *Mapping the labour supply as a social network*: The goal of this project is to develop the capacity to map or visualize the workforce as a dynamic system using social network visualization and analysis tools. This technique enables us to view the workforce as a network of individual people who form connections with other people as they move through training and work experiences over time. Through a professionally developed website and mobile application, we will be able to gather information from a pilot sample of approximately 200 people in Thunder Bay that will be analyzed using network analysis and mapping. This will provide a new category of labour supply data. Being able to visualize the workforce as a dynamic and patterned whole that is formed through the connections among people is a marked alternative to the static, broad, group-level statistics that are currently available. This is also a research project out of Lakehead University for which federal funds are being sought.

(3) *Developmental evaluation*: Developmental evaluation⁴ is well suited to these projects as it provides real-time data and feedback that enhances the development, testing, refinement and quality of potential solutions. Knowledge emerging from the evaluation will be used to adapt processes to best meet project objectives that respond to the dynamic workforce environment. The Regional HR Strategy is likely the first of its kind in the province and beyond. It is thus imperative that we chronicle the projects' progress and evolution, and evaluate their outcomes.

The NSWPB will provide leadership and administrative support for the Regional HR Strategy and its projects. The NSWPB's mission is to improve the quality of life in the Thunder Bay community through workforce development. Better aligning labour supply and demand is a major part of NSWPB's mandate. The greater this alignment, the more fulfilled and engaged the people of its communities will be, and the more effective and competitive its economy will be.

The idea of applying complexity theory to workforce development emerged from a 2012-2013 NSWPB project. The NSWPB then partnered with two Lakehead University professors to deliver a course on complexity and innovation to community leaders. Diverse community connections were formed through the course, and this resulted in the formation of the Human Resources (HR) Strategy steering committee. This steering committee, which reports to the Executive Director and Board of the NSWPB, contains 20 community stakeholders representing diverse perspectives, including the 2 Lakehead University professors and 8 others who are familiar with complexity theory.

These projects are ground-breaking. They are likely the first of their kind to apply complexity theory to understanding the workforce. Insights from this innovative work, as documented by the developmental evaluation, can be used in other regions and will likely attract international interest. As a result of this work, stakeholders in workforce development and training will have

⁴ Developmental evaluation is an approach to program evaluation that involves documenting decisions and formalizing the learning and the knowledge bases that drive decisions. It is particularly useful in programs that are continuously evolving.

access to more accurate, complete and real-time information on the current skills, experience, and movement of the workforce, and will be better able to identify gaps between labour supply and demand. With local funding to leverage provincial and federal dollars, the HR Strategy can be a significant driver of economic growth and enhanced well-being for Northern Ontario.