Parallel Sessions

These sessions represented a new, three-part approach to interaction within the RE$EARCH Money conference. A panel introduced some of the current challenges to be addressed by a given theme (driving innovation for Strand A and promoting investment in innovation for Strand B); then participants broke up into groups to consider the nature those challenges and what priority should be assigned to each one. Finally, each group reported back on their conclusions to the group as a whole. Those conclusions would provide the foundation for the next day's set of parallel sessions, which dealt with specific strategies to tackle those challenges.

Strand B: Investing in Natural Resources Innovation

Facilitator:

Caroline Cook, Manager, Innovation, Science Program Branch of the Canadian Forest Service, Natural Resources Canada

Panelists:

Pierre Lapointe, President & CEO, FPInnovations
P**ierre Meulien**, President & CEO, Genome Canada
Jim Taylor, Managing Director and Founder, Avrio Capital
Annie Theriault, Senior Investment Manager, Export Development Canada

Lapointe began by describing the front-row seat FPInnovations has had for changes in the natural resource sector from a forestry perspective. This included investing in Needs, Approach, Benefits, and Competition strategy established by SRI International, which altered how R&D was being conducted. “We went from cost-recovery process improvement to new products and new processes,” he said. “In order to do that we had to enter ourselves into the pre-commercial field, into venture capital, market analysis, and so on.”

Meulien portrayed Genome Canada as an early investor with an interest in genomics technology, with a split between human health applications and other aspects of life sciences. Since being created in 2000, he noted, the organization has invested some $1 billion in public money, which was leveraged to yield another $1.4 billion investment. “We as an organization have a very good lens as to what’s going on in academia and what’s been created,” he said. “We have a much poorer lens to the outside, as to who could help us translate some of this knowledge into use.” This shortcoming has been part of the impetus to create a new program on natural resources and the environment, which was on the verge of being launched. Toward that end, he explained that Genome Canada is seeking partners to bring genomics from the laboratory into new areas such as forestry.

Taylor introduced his company as a traditionally structured post-commercial investment firm, while Theriault’s group deals more typically with seed-stage support for start-ups and pre-commercial enterprises.

With regard to how companies in the natural resources sector are structured, Lapointe described them as being very much capital-dependent, as well as traditional in their outlook. “They have little receptor capacity and this is the challenge — to get them to transform themselves,” he said. This means anyone trying to develop an innovation will have a very difficult time finding partners to initiate and sustain that process.

Meulien described how this observation applied to genomic research, which must overcome serious hurdles in order to demonstrate relevance to potential industrial users. “There’s a huge gap in terms of the knowledge the receptor would have and how they could actually use some of these technologies,” he said, referring to a workshop Genome Canada held with the mining sector, which was an attempt to overcome this gap. “We have as much to learn about the private sector as they have to learn about what academia has to offer. There’s a huge learning curve on both sides.”

For Taylor, the raising of venture capital funding is an “enormously difficult task” in Canada, where there has been a steady decline in the number of potential partners like his firm. Therriault added that turning an innovation from a garage-based prototype into a marketable product can easily take four or five years; this would be more than half the amount of time venture capital firms allow before they exit from the investment.

Similarly, she observed that such enterprises are typically started by engineers who frequently stay in management positions longer than they should, so that refining the technical aspects of the product takes priority over getting the product to market as quickly as possible.

Lapointe offered the example of a joint venture FPInnovations undertook with Domtar to use surplus pulp and paper installations to extract nano crystalline cellulose from wood fibre to build an entirely new line of products. The technology itself proved to be sound, but finding clients for the new output became the major obstacle.

Meulien emphasized that an organization like Genome Canada can de-risk many technologies for commercialization, but there is still more to do. “It’s a matter of working out exactly what to do — exactly what we’ll de-risk and what will be the timeline and who will be the follow-on investors? It becomes complex. We need to talk with VCs who understand their sectors and the ecosystems associated with each one.”

Taylor acknowledged that his firm would take on some of these investments but noted that there had to be a demonstrable market. “There are a lot of science projects out there, people doing things because they can not because it’s solving any relevant problem. In the smaller world that I live in, people innovate because they want to create wealth. Nobody likes to admit that, but an entrepreneur goes into business to make money. He or she is going to innovate to create wealth for the people behind them.” Lapointe added that FPInnovations has responded to this challenge by establishing an internal R&D culture that includes a review process where the clientele for any particular project must be clearly identified. “That’s a major switch in culture for a lot of researchers.”

Theriault stressed that any viable undertaking should be able to attract corporate participation, ideally from a company that would be a customer for the resulting business. Such investment serves as much more than a way of raising more capital but above all as a confirmation of the new enterprise’s market potential.

These comments set the stage for discussions that took place at several tables, which singled out challenges that were subsequently presented for the rest of the room. Those challenges included the following:

- understanding just how long it takes new technologies to make their way into the marketplace, from the perspective of refining the technology itself, obtaining and maintain funding for this work, and ensuring the ongoing interest of corporate partners or potential clients.
- viewing technology transfer as a two-way street, not just a movement of ideas from universities to businesses, but likewise a movement of corporate products into academic circles.

- the need for private sector firms to have the funding and support necessary to adopt new technologies without interfering with their productivity.
- transforming technology push to market pull.
- bridging the gap between institutional innovation and industry, such as by getting industry involved earlier in the innovation life-cycle.
- integrating technical and social research skills to discern a consensus vision for society and innovations that should move us in that direction, as well as the process for moving us in that direction.
- obtaining the best timing for financing.
- confronting risk-aversion by promoting communication between companies and their customers in order to understand what might serve as the next product, coupled with communication between companies and academia in order to understand what new technologies lie on the horizon.

Lapointe interpreted several of these ideas as connected, reflecting a common need to promote innovation by building bridges between bankers and companies and clients and universities. “That link is missing,” he said, suggesting that the forestry sector was actually ahead of others in trying to establish such bridges. Meulien agreed, dubbing the need “end-to-end integration”, which covers most of the challenges being discussed. Taylor argued that besides simply building bridges between various interest groups, there is a need to align those interests.

For her part, Theriault took a somewhat different tack, calling for the means to lower barriers to the initial implementation of innovation within conservative industries. “At the end of the day those industries are conservative for a reason,” she said. “They’re not conservative because they want to be slow — if you stop the mine for two weeks it’s disastrous.”