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**Logistics in support of SME productivity and agility: case study**  
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## Digital Technology Adoption Pilot Program

International Institute of Logistics of Montreal (IILM)

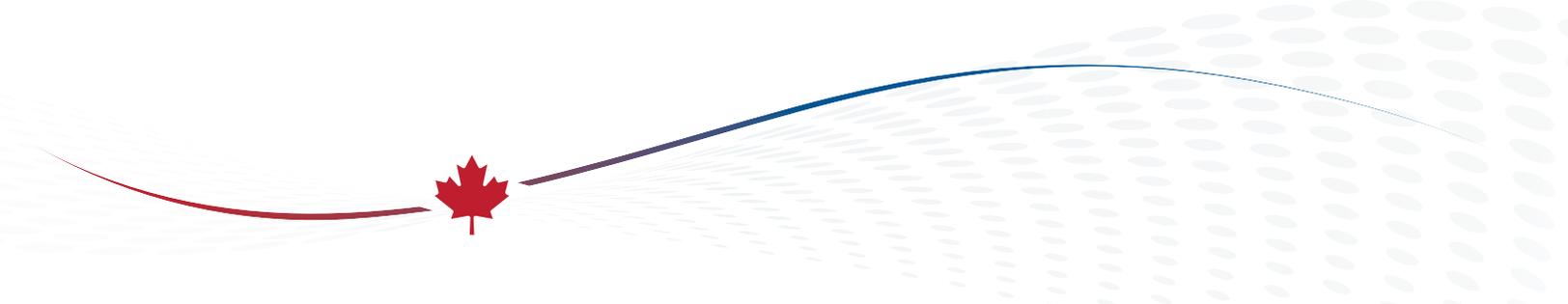
# Logistics in support of SME productivity and agility

## Case Study

January, 2014

Digital Technology Adoption Learning Series





## Summary

The International Institute of Logistics of Montreal (IILM) supports small- and medium-sized enterprises (SMEs) in Quebec interested in optimizing their logistics operations. The DV Hardwoods and Ruchers D.J.-F. Inc. cases illustrate how IILM has tailored its services, within the context of the Digital Technology Adoption Pilot Program (DTAPP), to provide solutions to very different problems in forestry and agri-food production.

## IILM: Rethinking the supply chain to increase productivity

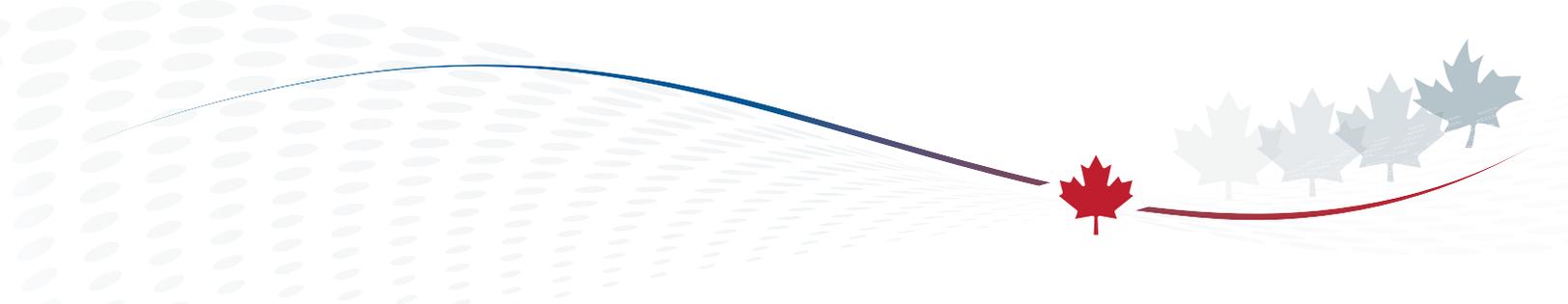
IILM is a College Centre for the Transfer of Technologies (CCTT) created in 2008 as part of the CÉGEP André-Laurendeau in Montreal. Its mission, which is unique in Quebec, is to increase business productivity through supply chain optimization in its broadest sense.

“SMEs primarily associate logistics with transportation and distribution activities because these affect every aspect of a business,” says Luce Laporte, Assistant Manager, Project and Business Development at IILM. “Too often, they are unaware of the potential productivity gains that high-performance technological logistics tools can offer them. Whether for computerized inventory management, information sharing between production and sales or product traceability in the event of a recall, digital logistics technology can accelerate a business’s growth and modernize its processes.”

Headed by Manon Delisle since 2012, IILM has a team of six permanent employees supported by a bank of consultants experienced in logistics. IILM works in four areas: 1) customized and online training; 2) technological and logistical monitoring and traceability; 3) support for businesses in improving their logistical performance; and 4) applied research. As a member of le Réseau Trans-tech, IILM helps SMEs find the best logistical and traceability solutions on the market. As needed, IILM supports SMEs in obtaining government grants related to their fields of expertise.



Manon Delisle, Executive Director, IILM  
Luce Laporte, Assistant Manager, IILM



## Collaboration between NRC-IRAP and IILM

Since the launch of the Digital Technology Adoption Pilot Program (DTAPP) delivered by the National Research Council Industrial Research Assistance Program (NRC-IRAP), demand from Quebec SMEs has been high with a number of manufacturing businesses experiencing digital technology problems that affect many aspects of their operations. In order to meet the needs of SMEs, NRC-IRAP, has sought to increase collaboration with Réseau Trans-tech CCTTs and IILM in particular.

In February 2011, the NRC-IRAP office in Boucherville contacted IILM to find out more about its expertise and work with SMEs. A few months later, on January 12, 2012, NRC-IRAP and IILM signed an agreement which would be a catalyst for showcasing the expertise and quality service provided by IILM.

“Most SMEs believe that the use of Enterprise Resource Planning (ERP) software in production and manufacturing will solve all their problems without realizing the strategic nature of their business processes and the integral role they must play in fitting within their IT management system,” explains Luce Laporte. “And SMEs must very often solve logistical problems, for which there are effective software solutions that will help optimize and standardize their processes.”

Working with NRC-IRAP’s Industrial Technology Advisors (ITAs), IILM refined the DTAPP work methodology by adding the analysis of a company’s existing software systems to its activities. Depending on its clients’ mandates and problems, IILM can now make a concrete contribution to accelerating the adoption of effective technologies within SMEs.

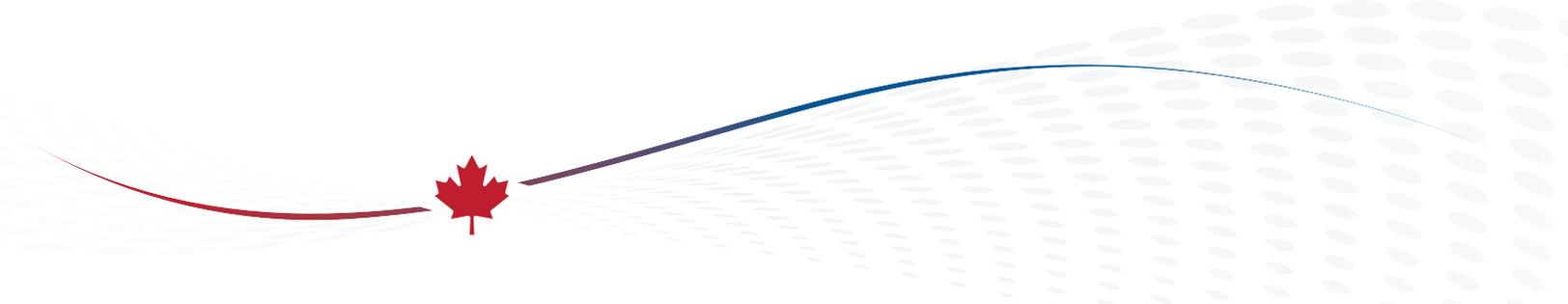
## How does IILM work with SMEs?

When faced with the need to modernize their IT systems and synchronize all their data in real time, SMEs often feel overwhelmed. Under DTAPP, IILM offers them a three-step strategy to see this more clearly.

### Step 1 –

#### Pre-diagnostics, including process mapping and needs analysis

“This first step allows us to identify a business’s real needs and to evaluate its capacity to integrate new technologies,” says Luce Laporte. “What are their expectations? What is their financial situation? What human and material resources can they dedicate to the modernization of its processes? Before undertaking a very challenging project for the business and its employees, we evaluate the project risks and success factors.” A pre-diagnostic report details the processes underway within the business and summarizes the issues, strategic directions to be adopted and risks, and makes recommendations.



## Step 2 – Feasibility study

This step involves accurately identifying and analysing all of the processes that could be modified to obtain productivity gains and increased performance. The feasibility study is based on four points: 1) the functionality of the desired technology; 2) the compatibility between the business and the suppliers of the desired technology; 3) the interfaces between the technology and the business's production equipment; and 4) the cost of the solutions available on the market.

IILM prepares specifications and an evaluation grid to help the business through the selection process. IILM may also attend the presentations and demonstrations of the three or four suppliers most likely to meet the business's needs. IILM's participation helps the SME choose the solution that is the best fit.

The feasibility study identifies the necessary investment and recurrent costs related to the adoption of new digital technologies.

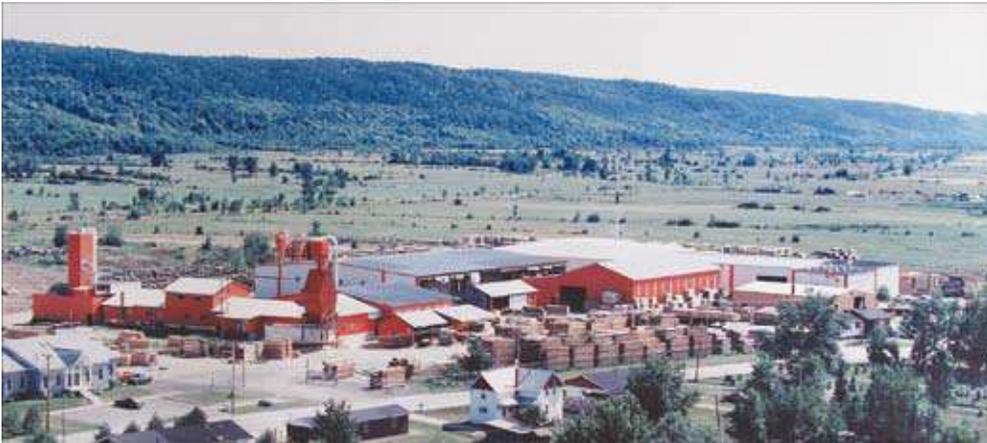
## Step 3 – Implementation of technological solutions

IILM has the technical expertise to guide SMEs through the implementation of a given solution in its logistical processes. The Ruchers D.J.-F. Inc. project presented later is a good example of the possibilities IILM provides under the mandates related to DTAPP.

# Two SMEs and their technology adoption journey with IILM

## DV Hardwoods

DV Hardwoods, founded in 1992, specializes in forestry products and is based in Fasset, Quebec. The company produces 40 million board feet of hardwood in its sawmill division and has a drying capacity of approximately 24 million board feet annually. It distributes and sells its products in Canada, the United States, South America and a number of Asian countries.



DV Hardwoods facility  
in Fassett, Quebec



### **The problem**

In 2012, the company's management knew that its computer system, based on the accounting software Acomba and interfaced with an in-house lumber grading and inventory management software, was reaching the end of its useful life and was at risk of no longer being supported by its suppliers. The system dated back to 2000 and was no longer able to keep up with the company's growth. In addition, Jean-Guy Bourassa, the Director of Finance, who was also responsible for the computer system, would be retiring soon. DV Hardwoods wanted a system that would improve its inventory management and customer service for at least another 10 years, and support the new ERP implemented at Lauzon Flooring, a company in Papineauville, a portion of whose production it distributes.

When it began its research, the company found too many possible solutions. Jean-Guy Bourassa realized he needed an objective external expert for support in the technology selection process. Pierre Meloche, an ITA at NRC-IRAP who is very familiar with Lauzon Flooring, directed them to IILM and the support made available through DTAPP.

### **The solution: A solid feasibility study**

DV Hardwoods knew very well what it needed, but was having difficulty evaluating the risk factors and costs of possible solutions. IILM first conducted a feasibility study to identify possible solutions and subcontractors that could implement the system chosen. IILM supported DV Hardwoods at every step of the selection process: mapping of the processes to be automated, specifications, proposal analysis and support during the presentations of the various suppliers. At the end of the process, DV Hardwoods chose Microsoft's Dynamics NAV software.



“Our priority was to equip ourselves with a well-supported system for at least the next ten years,” said Jean-Guy Bourassa. “Microsoft Dynamics NAV seemed like the natural choice. The control panel also offers many configuration possibilities for our industry type. We get a user-friendly tool that gives us a quick overview of the entire company.”

DV Hardwoods also wanted to be able to tailor a number of features of the software internally. Therefore, the company asked its systems integrator to implement the finance, production and distribution modules of Dynamics NAV, and then train its staff in order to gain a certain level of independence in terms of IT.

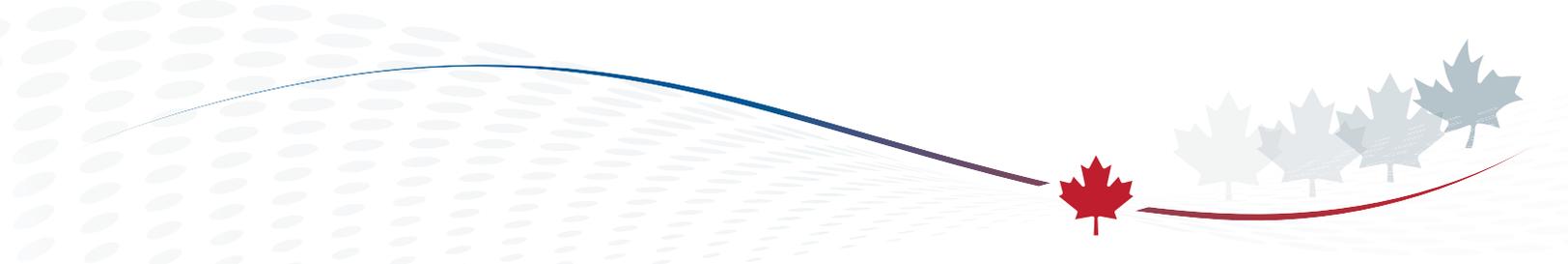
The implementation project being funded by DTAPP began in spring 2013 and must be completed in mid-February 2014. “We supported the company’s management team throughout the selection process by providing an outside look and methodology that helped them reduce risks and advance their project quickly,” says Luce Laporte. Jean-Guy Bourassa goes on to say that “without the financial support of DTAPP and IILM’s services, we could not have gone this far. We may have opted for a cheaper option that would not have met our needs over the next ten years.”

## Ruchers D.J.-F. Inc.

Ruchers D.J.-F. Inc., a family business founded in 1980, is the largest apiary farm in eastern Quebec. In addition to the honey products it sells under the brand Miel d’Émilie, the Beauce company, which has 20 employees, also distributes maple syrup across Quebec. It produces approximately 226,000 kg of honey a year, and its maple syrup processing and packaging capacity is 452,000 kg, one of the largest in Quebec.



Ruchers D.J.-F. Inc.  
Beauce, Quebec



## **The problem**

In order to grow and do business in the Sobeys/IGA network, all Ruchers D.J.-F Inc. products must be identified by barcodes that are compatible with the inventory management system used in the large automated warehouses and stores. All suppliers must also have a tracking system that identifies the origin and different packaging steps of the products sold in its supermarkets.

For Jean-François Doyon, president of Ruchers D.J.-F., complying with Sobeys' requirements and implementing new digital systems was essential because the survival of his company depends on it. But the company was not yet very advanced in terms of automation, its employees were not very familiar with IT, and the company was still managed using traditional methods and had no tracking system.

## **The solution: Broaden IILM's mandate to support the company throughout implementation**

In February 2013, Jean-François Doyon met with Paul-Émile Fournier, an ITA at NRC-IRAP, who directed him to IILM. Once IILM's pre-diagnostic test validated the choice of tracking and inventory management system the company needed, Mr. Fournier suggested that IILM broaden its usual service framework to allow Ruchers D.J.-F to retain IILM's services to manage the project internally and supervise the consultants. "We agreed that the lack of internal expertise and resources at Ruchers D.J.-F. Inc. was the main obstacle to the successful integration of the new technology," says Luce Laporte. "We not only helped Ruchers D.J.-F. Inc. choose the best technological solution, we conducted weekly monitoring throughout the implementation."

Ruchers D. J.-F. Inc. chose Solutions Effecto Inc.'s Manufacturing Execution System (MES) because of its ability to integrate all their data, its compatibility with the Acomba accounting system and its information fluidity between the production, inventory and distribution systems. Solutions Effecto Inc. installed the software and provided training so that an employee at Ruchers D.J.-F. Inc. would be able to manage the ongoing data entry.

"We suggested that Ruchers D.J.-F. Inc. adapt its procedures to the MES rather than try to reprogram the software," says Luce Laporte. "Generally ERPs integrate industry best practices, making it more logical and profitable for SMEs to systematize and reorganize their procedures."

"The biggest challenge was convincing everyone that we needed to change our work methods," says Jean-François Doyon. "Attention to details was indispensable in integrating the MES to ensure compliance with Sobeys' requirements. It is normal to encounter some resistance to change when undergoing a transformation of this kind, but the team is now very proud of having overcome the challenge."



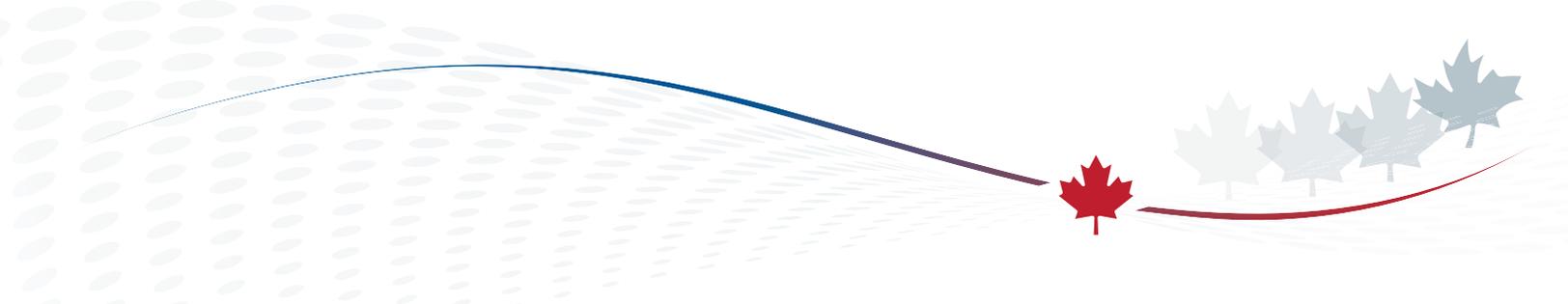
## The benefits of DTAPP for IILM

Over the almost two year period, from January 2012 to December 31, 2013, IILM has carried out 78 projects with 53 SMEs under DTAPP. “Most of our clients have been referred by word of mouth by ITAs and Trans-Tech Network technology advisors,” says Manon Delisle, Executive Director of IILM. “DTAPP has enabled us to acquire increased visibility and to demystify logistics, particularly within the network of ITAs and with SMEs, through two awareness activities. Due to the nature of our work, we often help SMEs automate procedures that are still being done manually. Our mission naturally corresponds with the objectives of DTAPP.”

“Over the course of the DTAPP projects, we have deepened our knowledge of the logistical challenges faced by SMEs,” says

Luce Laporte. “A lack of funds and internal expertise that can be dedicated to digital logistics technologies slows the adoption of technologies that will be increasingly necessary to remain competitive. SMEs also think these technologies are expensive, which is untrue, and, what’s more, they provide an excellent return on investment.”

“The projects carried out with DV Hardwoods and Ruchers D.J.-F. Inc. also demonstrate how the adoption of digital technology can help integrate SMEs with their suppliers and partners within their industry,” says Luc Tran, an ITA at NRC-IRAP. “Competitiveness is not a just a question of internal productivity, it also involves cooperation and integration within client/supplier networks.”



## **About the Digital Technology Adoption Pilot Program (DTAPP)**

As part of the Government of Canada's Digital Economy Strategy, NRC-IRAP is delivering the Digital Technology Adoption Pilot Program (DTAPP).

DTAPP represents a significant investment in the Canadian economy to increase the productivity growth of small and medium-sized enterprises (SMEs) in Canada across all sectors through the adoption of digital technologies.

An important component of DTAPP is to assess and measure the outcomes of digital technology adoption on the productivity of SMEs. DTAPP will utilize this aggregate knowledge and transfer successful practices and lessons learned to the broader SME community in order to:

- ▶ improve the rate of digital technology adoption by SMEs
- ▶ improve understanding of the link between digital technologies and productivity
- ▶ raise awareness of the benefits and importance of adopting these technologies

This information will be a critical tool to encourage prospective adopters of digital technologies and will continue to impact the potential productivity growth of the Canadian economy well into the future.