

**Asian emerging markets: different business opportunity for Canadian SMEs**  
*Part 3. Linking Digital Technology and Appropriate innovation for Asian emerging markets*

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A key success factor for *appropriate innovation* is on-going and close interaction with consumers at the early stages of product development. This is essential for understanding their unmet needs and specific market constraints. It is particularly important for Canadian firms, especially SMEs, in unfamiliar Asian emerging markets. Commercialization then involves also addressing certain constraints of these markets, such as “[last mile](#)” infrastructure gaps that can limit sales, distribution, and after-sales service.

Digital technology, beyond e-commerce, can play an important role supporting appropriate innovation, especially for SMEs. An example of such technology is additive manufacturing, targeted under Canada’s [Industry 4.0](#) initiatives. This involves adding layer upon layer of materials to make a product, as with [3D printers](#). Diverse inputs may be used, including plastic, metal or concrete. Additive manufacturing is also spurring the development of new materials. Products range from consumer goods, to more complex sectors such as medical devices, automotive, and aerospace. Additive manufacturing is also considered environmentally friendly, since it uses less energy and generates little manufacturing scrap.

For Asian emerging markets, additive manufacturing allows firms, [particularly SMEs](#), flexible, market-responsive innovation. Product prototypes can be created quickly, based on information from potential users. They can be rapidly market tested and refined. Existing (Canadian) products may be adapted to local needs and constraints; or entirely new products generated. Once a product design is finalized, production can take the form of [mass customization](#) by linking a fleet 3D printers, controlled through special software.

Canadian SMEs can thus design and manufacture products responsive to specific needs and constraints of Asian emerging market consumers, particularly in the very large “2<sup>nd</sup>-tier” markets of consumers with high aspiration, lower incomes, but significant buying power (Part 1). Production can be on larger scale, or for limited niche markets, and flexible in location, facilitated by [e-commerce](#). Technology such as 3D printers can overcome traditional entry barriers for small firms, associated with limited funds for fixed costs and low product volumes.

Linking digital technology to opportunities in Asian emerging markets can also accelerate their adoption by SMEs. In general, Canadian manufacturers have been slower to adopt

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advanced technology than their international competitors. More than [60% of SMEs](#) have not yet implemented Industry 4.0 initiatives, involving digital technology in some form. Adopting new technology can be challenging and costly for firms, particularly SMEs with limited resources. They are often constrained by limited funds for fixed costs, and low product volumes. Linking digital technology, such as 3D printers, to significant and tangible Asian market opportunities can provide clear incentives for their adoption.

Exporting by SMEs is a long-standing but challenging [government priority](#). A focus on appropriate innovation for Asian emerging markets linked to digital technology, can complement existing diverse programs of agencies dealing with trade development and new technology adoption. Examples of initiatives include the following:

- Establish a network of SME resource centres that bring together firms, government agencies, educational institutions, to facilitate digital technology adoption, including sharing such technology to reduce costs; provide training and skill development; and facilitate, learning, collaboration and innovation through exchange of experience and case studies. Similar centres have been proposed in the Government's [Economic Strategy Tables](#); and examples exist in [Europe](#) and [Singapore](#).
- Linking such centres' to granular understanding and targeting of particular market segments and customer categories is also likely to facilitate digital technology adoption.
- Expand from laboratories to markets financial incentives for [funding R&D](#), including support for international market-based interactions for product innovation.
- Facilitating alliances with Asian SMEs ("your own size") targeted at "2<sup>nd</sup> tier" markets is particularly important; including with unconventional partners such as [market-oriented NGOs](#) offering product credibility, [local knowledge, and market reach](#), as with First Energy's Oorja stove's partnership for product distribution and after-sales service (Part 2).

The appropriate innovation approach focused on Asian emerging markets, supported by digital technology, can add an important dimension to Canada's export and technology strategies in a post-pandemic world. Our on-going work suggests, it is also more within the reach of most Canadian firms, particularly for [internationalization of SMEs](#). This could lead to significant benefits for Canada, and also for Asian consumers in underserved markets.