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New product development in textiles

Innovation and production

Edited by L. Horne



The Textile Institute

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Toward the end of the 1990s, professionals from many sectors attempted to speculate on many aspects of life in the twenty-first century. In an article entitled 'The importance of clothing science and prospects for the future', published in the *International Journal of Clothing Science and Technology* (2002, 14(3–4): 243–244), Masako Niwa wrote:

At the turn of the millennium, we must question the basic expectations of technology. As new technologies can have a great impact on industry and economy, much is expected of technology. Society expects economic results from technology. Ought not the field of textile technology to change its direction to concentrate on meeting, through new inventions and discoveries, the most important and essential needs, such as widening our views of the world, creating new cultures, protecting our health, keeping us safe, and raising the quality of our daily lives and welfare?

Now, ten years into the twenty-first century, Masako Niwa's aspirations for textile technology are becoming a reality.

New product developments in textiles have indeed widened our views of the world. The ever-growing spectrum of textile products for medical and health end users has created awareness of the implications of aging populations in various regions of the world. Wars and natural disasters have heightened our sensitivity to safety and protection of people and structures. The need for protective systems for the military has stimulated fruitful research and development into materials that are light in weight but durable, materials that form an effective barrier to block chemical or biological agents, or finishes that render materials less detectable. Natural disasters remind us of the need for safe structures. Textiles are being used to reinforce structures or to form barriers to protect properties and structures from the destructive force of rising waterways, wind and erosion. In man-made disasters such as oil spills, textiles play a role in environmental remediation.

In the twenty-first century, some countries will face the challenge of renewing their aging infrastructure; still more countries will be developing new infrastructure as they experience economic growth. These developments will, inevitably,

stimulate a surge of demand for innovative technical textiles. The awareness of the impact of industrial activities on the environment has propelled governments to develop and implement policies for their industrial sectors. The environmental impact of producing textiles is already well known. The 'green' movement and the consumers who support it are encouraging textile scientists and engineers to develop appropriate processes and technologies to reduce the environmental footprint of textile production.

While the ability to develop and design innovative textiles and textile products is essential to the sustainability of textile industries in industrialized countries, the migration of textile production from high-income countries to countries that enjoy competitive advantage in terms of production cost has offered many valuable lessons. Textile and textile product production have continued to be effective engines of growth for developing economies. The same phenomenon has brought attention to both the plight and the latent capabilities of some of the least developed countries in the world. It has also rendered developed countries vulnerable when the manufacturing sector loses its strength as a major pillar of their economic growth. The evolution of the global textile landscape has given us an opportunity to become more aware of places, people and the environment that surrounds them.

The wide range of new developments represented in this book signals a paradigm shift. Textiles are no longer mere inputs into a finished product; they have become sources of solutions to issues that affect society. As textiles are being used with increasing frequency to create new products that serve very specific functions, this phenomenon calls for new business models, interdisciplinary collaboration, and new measures of textiles and product performance. As a corollary, there is a pressing need for critical examination of the manner in which higher educational institutions design and deliver textiles programs.

Finally, not only have the contributors to this book shared their expertise, they have also offered deeply meaningful reminders of the immeasurable value of textiles to the human condition.

Lena Horne

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