Information technologies have changed many aspects of everyday life and business, all the way down to the relatively niche market of functional fabrics and clothing. Internet wizardry is opening the field to new players and speeding up the rate at which new products come to market.

Crowd-backed textile innovation

It's a combination of entrepreneurialism, customisation and lottery. When a start-up business launches its product on a crowdfunding platform, it connects directly with future customers. These contribute not only to the business venture but also to the product itself through their comments, questions and suggestions. But it is also a lottery. Anywhere from one-third to one-half of the campaigns fail to inspire the smart and connected crowd. And for those that are successful, manufacturing and delivering the innovative product can be a major challenge for a small, inexperienced team.

As often happens with internet-based technologies, one mostly hears about the formidable success stories generated by this new and inevitably disruptive process. Admittedly, the experience can be quite positive, generating a huge amount of enthusiasm and tremendous media attention for an unknown company. Antelope, a muscle-activating smart suit developed by German company Wearable Life Science, raised over $1 million on the Indiegogo platform last year with the help of 1,134 backers. Physiclo, a company making fitness wear with built-in resistance bands, fetched a shade more than $150,000 thanks to 1,139 backers, also on Indiegogo.

So far, so good. What happens next no longer relies on the magic of the web but depends on one's ability to turn an innovative idea from prototype stage to an actual manufactured item of clothing. Thanks to the transparent nature of internet-based platforms, this critical stage is in plain view, and a scroll down the comments sections reveals the many hitches that start-up organisations run up against.

A case in point: Baubax, a travel jacket with multiple pockets and features, that raised a record-breaking $9.2 million from 45,000 people in 81 countries. It was Kickstarter's most-



Prime4orm is based on a patented garment construction that Garmatex says "gently reminds the wearer to sit or stand up straight". The crowdfunding campaign revealed that it appealed not only to athletes but also to a much broader consumer base.

Garmatex

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Tom Cridland's timeless basics are backed by a 30-year guarantee, to encourage people to take "a less disposable attitude towards fashion," he says. Each product was launched via crowdfunding, enabling him to sell 7,000 sweatshirts and 4,000 T-shirts so far.

Tom Cridland

funded item of clothing and its fourth most-funded campaign ever. But manufacturing and delivering the 80,000 pre-ordered, self-proclaimed "world's best travel jackets" has been far from smooth for Hiral and Yoganshi Shah, the husband and wife team that founded the Chicago-based company. In addition to delays in delivery, key complaints voiced by backers concern sizing and fabrication. Word gets around fast and disgruntled backers have even created a Facebook page.

Inexperience may be the main problem here, but meeting demand is an issue for some of the more established companies that have engaged in crowdfunding. After a series of wildly successful campaigns, Toronto-based underwear brand Knixwear raised $1.5 million for its Evolution Seam-Free Bonded Bra in October 2015. By the end of April this year, it had sent out 4,000 bras and expects to be able to fulfil all orders by late July. Enthusiastic backers need to be patient. As do those eager to try on the Antelope suit that those people eager to and who funded the campaign in December 2015. The start-up has put its early backers on hold as it strives to respond to demand from elite athletes competing in the upcoming Rio Olympics. The expected delivery period posted on the site is late August.

Validating a project

Established brands will not be surprised to hear about delivery issues that can bedevil even the most sophisticated supply chain. That said, the first lesson learned here is that crowdfunding shatters lead times and is arguably one of the fastest ways to validate the viability of a new product. The technology-based process makes the most of the internet's global reach and omnipresence in households all over the world, providing an entrepreneur with immediate feedback. It also upends conventional business models. Instead of soliciting a few people to invest a large sum of money, a company can now reach a large group of individuals willing to contribute just enough funding to bring a product from prototype to production.

While some campaigns go through the roof, funding goals are often calibrated to pay for a first production run. "Setting a goal was rather easy; we just wanted enough funding to produce the clothes," says Tom Cridland, who has run several successful campaigns, most recently one for a self-explanatory product called The 30-Year Sweatshirt. His clothing line is manufactured in Portugal with high-quality materials and is backed by a 30-year guarantee. When Canadian company Garmatex launched its posture-enhancing shirt Prime4orm on Kickstarter in February last year, it asked for $60,000, estimating that consumers would be willing to pay $100 for the shirt. "We saw it as a high enough target to see consumer reaction and a reasonable enough target to launch production," company president Darren Berezowski tells *WSA*. The 30-day campaign attracted 291 backers and raised $63,769. "The reaction was great and we now have lifetime consumers," he adds.

Compared to traditional business practices, a start-up seeking to market functional clothing will find it less frustrating to rally a broad base of committed individuals rather than seek to convince a few professional buyers working for major retailers. "The beauty of crowdfunding is that you know exactly how much product to produce," points out Mr Berezowski in reference to the difficulties sports retailers are currently facing and citing the recent closure of the Sports Chalet retail business in California.

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Feedback from the crowd can be quite useful for a young business. Garmatex's main activities are in performance fibres and when it developed the Prime4orm shirt, which uses gentle tensions that are said to realign the muscles, it initially intended it for athletes. The crowdfunding campaign revealed that non-athletic customers also found the product useful. "We quickly realised that Prime4orm can be worn not only for performance purposes but also for health reasons," says Mr Berezowski, likening the exercise to an instant market analysis. Comments from backers also led to minor changes in the product's design.

Targeting early adopters

In late 2013, when Carlos Cortés and his wife Fátima Rocha first developed ThermalTech, an innovative photovoltaic stainless steel mesh for use in jackets, they decided from the start to launch it via a crowdfunding campaign and had several specific goals. "We wanted to connect with early adopters; we believe that they are the most active on crowdfunding sites, and we wanted to offer the jacket at a lower, more accessible price to our most motivated customers," says Carlos Cortés, chief executive of the Houston, Texas-based company. "If we had launched the product at retail, consumers would have first looked at the jacket's shape and colour, not the technology per se, which is what we really wanted to put forward."

The company's background in sun-powered water heaters inspired it to develop the steel mesh fabric, which measures 0.3 mm in thickness and has a photovoltaic coating that captures the energy of sunlight, artificial light as well as infrared rays emitted by the body. At first, the mesh was placed on the outside of the jacket but the company then decided to use the fairly flexible steel mesh as a lining where it is still able to harness the energy of the sun. "It picks up 80% of the sunlight that goes through the outer fabric," he says. When darkness falls, ThermalTech continues to retain heat for a period of time. No batteries needed.

The February 2016 campaign on Indiegogo raised $65,000 from 300 people in 45 days. While most of the start-up's backers are based in the US, the second largest group is located in Asia, mostly Japan and Hong Kong, followed by the Netherlands and Germany, says Mr Cortés, capturing a fairly clear picture of the product's possible global reach.

ThermalTech has since launched a production run for 3,000 jackets. For those who didn't catch the product during the initial crowdfunding campaign, the jackets are still on sale on the Indiegogo website. Having precise information on sizes and colours has made it easier to organise production, says Mr Cortés, adding that 200 jackets are still available for sale. Inventory management is greatly simplified, but the steel-mesh garment is said to require special manufacturing know-how, which may delay distribution, currently programmed for mid-July for the earliest backers.

Demonstrating the appeal of ThermalTech serves another purpose the company has in mind, which is to license out the technology to other brands. "The campaign's success proves that there is demand," says Mr Cortés who is already "in conversation" with fashion and sportswear brands.

Struggling to find clients for his high-tech Armalith denim, French entrepreneur Pierre-Henry Servajean decided to launch his own brand to validate the concept via crowdfunding.

Labelled Bolidster, the jeans made in the cotton and ultra high weight polyethylene fabric (see separate article in this issue of *WSA* on abrasion resistance) were offered on Kickstarter and raised €16,381 thanks to 110 backers. His ultimate goal is to convince established biker, jean, skater and streetwear brands that there is real demand for his super-tough fabric. "It is great to have a base of dedicated consumers. It gives us confidence to take the next step," says Mr Servajean.

Starting from scratch

With no experience either in business or in fashion, 24-year-old entrepreneur Tom Cridland has, as mentioned, built his brand pretty much entirely through crowdfunding. He started out



Launched on Indiegogo earlier this year, ThermalTech's solar-powered jackets are lined with a stainless steel mesh that captures the energy of the sun thanks to a photovoltaic coating. The company is now producing 3,000 jackets and collecting data and feedback from its backers to make a second-generation jacket.

ThermalTech

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Crowdfunding is a way to approach fashion from a technological and functional angle, this is not common for jeans," says Pierre-Henry Servajean, who used Kickstarter to launch new denim brand Bolid'ster. Its jeans are made in Armalith, a patented cotton and high weight polyethylene blend fabric that is produced by Royo in Spain.

Bolid'ster

with a £6,000 UK government start-up loan and a small roster of high-profile customers. His very first move was to contact the celebrities he admires, from Leonardo di Caprio to Rod Stewart, many of whom bought his first item of clothing, the Timeless Chino. This strategy was useful to generate buzz on social media, another free (though time-consuming) internet-based technology. His first crowdfunding campaign raised £20,000 and helped him reach an international audience, and specifically the US market. The second campaign, for The 30-Year Sweatshirt, brought in £50,551. A third campaign for, yes, The 30-Year T-shirt, was offered on two platforms and totalled £25,000. These, along with the brand's e-shop, have enabled the company to ring in sales of £250,000 in its first year. "Crowdfunding is a wonderful tool for an entrepreneur," says Mr Cridland. "It enabled me to build a customer base without having produced anything."

Upper Downs, a new mountain bike apparel brand founded in the UK by two former IT professionals, also turned to the crowd for its market launch. Having little experience in fashion, Matt Parker and Henry Rendall were thus able to build the brand from one single, strong, iconic jacket that would firmly establish its identity. They also needed £25,000 to reach factory minimums, Mr Parker tells *WSA*. The jacket is made in Polartec NeoShell, a fabric chosen for its high breathability. "It is a revolutionary textile. It is lightweight, durable, elastic and expensive, but it delivers," he says. The campaign was both successful and stressful. "There was loads of excitement at the beginning, before it plateaued. And then there was a huge rush at the end. We made our goal with only 90 minutes to go." Most of the backers were located in the UK but people living in 35 different countries contributed to the campaign that raised £25,800 in June last year. Enough to produce 250 jackets in a single colour, grey. Since then a second, blue shade has been introduced.

Metrics and media

Crowdfunding can be considered a disruptive technology on one level at least, data collection. Precise metrics are a feature of many internet-based processes and they are invaluable (some say they are the 'new oil') for young businesses. "We looked at all the crowdfunding platforms and were particularly interested in acquiring trustworthy metrics," says Mr Berezowski. "All of these companies are still fairly young, but we felt

Nearly 300,000 projects have been launched on Kickstarter, since its beginnings in 2009. One-third of these reached their funding goal. In the fashion category, 12,000 failed and two of the 4,000 successful campaigns raised over a million dollars, whilst the majority sought $1,000 to $20,000.

Kickstarter/Shutterstock



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Mountain bikers and former IT professionals, Matt Parker and Henry Rendall launched their brand Upper Downs with just one jacket style, made in a Polartec Neoshell fabric. The month-long campaign on Kickstarter raised £25,800, meeting its goal (£25,000) with only 90 minutes to go.

Upper Downs

that Kickstarter was the most advanced with regard to data mining." At ThermalTech, Mr Cortés chose Indiegogo because he believes it is a stronger platform for technological products and it offered more guidance and advice.

Crowdfunding websites don't seem to be very picky about their clients and will accept any invention however far-fetched, no (or very few) questions asked. Algorithms do most of the work. The platforms take a proportion, from 3% to 5%, of the total funds raised. Some, like German-based Startnext, leave it up to the start-up to decide, with a minimum set at 1%.

The tremendous media attention that these campaigns attract is another positive point for the system. "Media coverage adds credibility to our concept," says Mr Cortés. The quality of the imagery the start-ups produce themselves is also essential. A high-quality video helps establish a brand that is otherwise completely unknown, points out Mr Parker. Some also tie their campaign into an Instagram account to generate more buzz and drive sales "Fashion thrives on visual content," says Mr Cridland.

Crowd-based product development

Admittedly a strong tool for a start-up that has few products to sell and a small organisation, crowd-sourcing can also be useful for mature brands. A new service developed by UK-based trend forecasting and product consultancy WGSN is tapping the power of the crowd to assist brands in product development. "The number one issue our 6,500 customers repeatedly challenge us with is: provide us with greater certainty, quickly, on which of our lines or ranges will be a sales success ahead of us committing to the costs of manufacturing, shipping and stocking them," says Clare Varga, director of the Active category at WGSN.

To address this request, the company created Styletrial, a new online section of its web platform, last year. A company can load between two and 16 images of items to trial, which are viewed by a panel of 100 people. It is possible to consult UK- or US-based customers and in three demographic groups (16-24, 25-34 and 35-44). Results are given within a week.

The fast-feedback service is designed not only for fashion brands but could also benefit functional sportswear brands, says Ms Varga. "Sports brands don't need help on the performance and tech aspects of their designs – they have that sorted – but feedback on colours, prints and silhouettes would be hugely advantageous. The sportswear industry also works to extremely long lead times so Styletrial helps with some of the challenges of designing a long way out, especially on colour." In addition, she points out that this platform can help a sports brand gauge its success "when entering new product categories or new geographic markets as it validates their decisions using technology and modern working methods."

The internet, with its revolutionary impact on culture and commerce since the mid-1990s, is part of what will be seen as the fourth industrial revolution, a combination of technologies building on the digital age. It will include 3D printing and the ever-expanding world of apps and connectivity. The new paradigm will include direct links to the consumer with the ability to engage in the design process. This point is raised by Mr Berezowski at Garmatex: "The crowdfunding community believes it is part of a greater purpose; the individuals are each contributing in their own way to the project."

Beyond its ability to kickstart a young business, it gives new meaning to the proverbial wisdom of the crowd.

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