The invention of fleece changed the entire apparel, sports and outdoor market. It is even considered to be one of the top one hundred inventions of the 20th century. As its functionality is unrivalled by other fabrics, one would think that the market situation would be fairly stable and transparent. In fact the opposite is true, as fabrics and styles continue to change rapidly, and new and opposing trends and technologies are constantly being developed and redesigned. Analysts of the US fleece market are reporting increased levels of activity and a shift in market share within the fleece industry. This has led to increased competition within the industry and has resulted in some interesting new products.

Competition heats up in the fleece market



Lowe Alpine's Delphia jacket with Polartec Thermal Pro 'wild and curly' fabric.
Lowe Alpine

In the USA, major names such as Malden Mills and Kingwhale are synonymous with the fleece market, but other companies are now also entering the arena to challenge the industry's giants. Meanwhile, in Europe, fleece brands are also catching up in the functional outdoor market and achieving a larger market share. In sportswear and fashion Italy's Pontetorto, Calamai and Becagli have always been strong, and other smaller European labels are a definite threat to the larger American brands that have always dominated the field of fleece. The outdoor apparel industry is steadily moving away from the market leaders and this shift has been attributed to three main factors: the high cost of the fabric produced by some large well-established brands; a perceived decline in quality; and that other companies offer functional alternatives to the fleece products offered by the recognised brands.

Nowadays, most companies offer two fleece brands in their collections—a development that is similar to what happened with waterproof and breathable third layer fabrics in the 1990s and continues today. This was because, unlike the market leaders in waterproof and breathable markets, smaller brands were a great deal cheaper and were more willing to adapt their products to the specifications of individual customers. This scenario is now apparent in the fleece market and the sector is in the process of using more diverse fleece fabrics and suppliers within the industry. Large apparel brands have already established a second, and sometimes even a third brand or fabric in their ranges as an alternative to the big name fabric brands such as Polartec. This may appear to be a negative trend for the likes of Malden Mills' Polartec, etc.,

but in fact it is by no means the 'beginning of the end' for such established brands—just as Gore-Tex continues to succeed in waterproof, breathable membranes, Polartec fleece continues to be a 'must have' with regards to the premium quality and innovative styles and structures of the fabric. The brand power wielded by Polartec will maintain its position and the current diversification of the industry is a means of meeting the demands of a wider consumer audience.

Jack Wolfskin uses fleece from three different origins. Polartec covers the high-end styles with Thermal pro Highloft, Powershield and Windpro. Its micro quality fleece is supplied by Italian Pontetorto and the 'low-cost' fleece for its men's, women's and the children's collection 'Nanuk' is sourced from a supplier in the Far East. Because Nanuk comes with its own fabric logo and hang-tag and is offered in different qualities (Nanuk 200, 300 and 200 Bipolar) certain consumers are under the impression that the supplier is a branded fleece such as Pontetorto or Polartec—which of course it is not. But this category of buyer is not overly concerned about this as the fleece isn't bad, it is very economical and it is bought as a 'disposable' product that they will change every two to three seasons, purely for fashion reasons. Jack Wolfskin's example represents an overall trend: The North Face uses Polartec and a fabric it calls 'TKA-Fleece'; while Berghaus has an 'AWL-Fleece' as its cheaper alternative to Polartec fabrics. On the other hand, there are still a large number of hard core users with high sentimental feelings for their old 'Polar Plus 300' fleece bought fifteen years ago—that is still in same shape as a two-season Nanuk fleece–as well as those that still seek the highest quality possible for use in situations where performance is paramount.

Alternatives in high-end fleece

Whilst the market seems open to alternative fabrics, there is also increased demand for high-end fabrics, innovative solutions and styles and it's hard to keep a step ahead in terms of innovation as structures and styles are easily copied. Polartec is facing stiff competition from new players in the market, but in spite of this, it continues to present new innovative functional styles which have kept it at the top of the industry for nearly 30 years.

For autumn/winter 2007 Mountain Hardwear is adding alternative higher-end suppliers and fabrics to its collection too. This means its Monkey Man Jacket will cease to be called the Polartec Thermal Pro Monkey Phur, and become simply 'Monkey Phur' fabric as Mountain Hardwear is not keen on letting people know where this fabric comes from. But it claims that there is an improvement in the



Mountain Hardwear's Mastiff Pullover uses bio-mimicry Polartec Thermal Pro fabric designed to imitate animal fur.

Mountain Hardwear

fabric: "It's tremendously soft, softer than anything we have had so far, it has more loft and is slightly more lightweight compared with our former fabric," say Arthur Kudelka, who looks after the company's PR in the German market. Mountain Hardwear will also include a Euro Stretch fleece fabric in its Expedition Reversible T in autumn 2007. The Euro Stretch is a dense bi-elastic fleece that can be worn either way, allowing a smooth outside and a plush inside, which is said to be ideal for layering and gives surplus warmth; or reversed with a smooth inside for active sports with improved wicking properties. Mountain Hardwear again argues that the new fabric is functionally superior to its former one.

The same applies to Mammut. For the coming winter season the Swiss outdoor and mountaineering company has announced a new fabric exclusively made for it by Eschler. 'Eschler Swissknit' is a fabric that offers good heat insulation, high breathability, moisture management and an extremely soft drape. Mammut has added the new fabric to its mountaineering line producing a jacket and a hooded jacket in both men's and women's cuts.

Tough time for classics

Within the three-layer system fleece is a necessity. So far nothing has surpassed it in terms of functionality. It is warm, quick drying, lightweight, easy to care for and retains its shape and colour for the life of the product. But fleece has developed an importance beyond functionality. In sportswear and everyday wear the benefits have long been acknowledged and it has the added bonus that it is easy to process. This has led to the functional outdoor and sports



Mountain Hardwear's Power Stretch Balaclava with a Microchill Zip T.

Mountain Hardwear

market being swamped by different waves of simple fleece clothing. This competition has created hard times in terms of sales of standard 200 and 300 fleeces in the outdoor business even though the variations in quality are sometimes extreme. As David Parkes from Concept III, a company that sources and helps in the development of fibres and fabrics says, "Better fleece is required by the consumer but there is constant pressure for the better fleeces to be offered at the cheaper fleece price." For retail and industry this means hard advisory service work, as even high quality classic fleece can hardly compete with cheaper similar fabrics.

Speciality fleece market growing

Even though the fleece market has always been about performance, the principal trend continues to be constantly improving performance. That is, more performance with less weight. Therefore high-loft fabrics are the major issue in the functional fleece market and this segment is growing quickly. The key to high-loft fabrics is their unique construction. They feature an open-mesh stitch with low density on the back and a high-loft pile face side. This provides increased airflow and minimises weight while increasing warmth and compressibility. Malden Mills claims that its Polartec Thermal Pro High Loft fleece is at least 20% warmer per weight than standard fleece, and offers a 40% better compressibility compared with its classic fabric.

Scandinavian outdoor brand Norröna underlines the clear tendency and distinction between hard-core users and casual sportswear usage. "Our experience in sales is that the hardcore user goes for new fleeces and adapts very early," says product manager, Tomas Carlström. He adds, "Normal users looking for a fleece for more casual use usually stay with traditional looks such as the Polartec Series 100 and 200."

Although they are quite different in terms of technology, pile fabrics offer similar performance advantages as high-loft fleece. Every individual fibre is locked directly into a knit backing in pile fabrics, thus allowing each fibre to stand upright, instead of lying flat. According to sales manager Bill Trienekens of Glenoit, its pile fabric GlenPile, also offers excellent insulation with high warmth to weight ratio. Its softness, breathability and wicking properties make it exceptionally comfortable, and, because the fibres stand upright, it is said



Mammut in partnership with Eschler has applied an exclusive new fabric 'Swissknit' to its jackets.

Mammut

to be ideal for layering. Compared to high loft fleece, pile fabrics have an advantage because of the unique production method used, as they all incorporate wicking properties, which are not inherent in standard fleece.

Tracking down nature

The most recent development in fleece fabrics is biomimicry—whose name is derived from bios, meaning life, and mimesis, meaning to imitate—which is a science that studies natural models and imitates them. To some extent, innovations have nearly always been attempts to copy nature (aeroplanes copying birds' wings or a burdock inspiring Velcro). The qualitative difference is that biomimicry is a new way of viewing and valuing nature. It is not merely an attempt to extract ideas, but aims to actually learn from nature to find out how processes work efficiently.

Helly Hansen has launched a performance base-layer fabric made from hollow fibres. These are said to imitate the fur of the polar bear, which can swim through Arctic waters without freezing because it can store air in the cores of the fibres allows water to run down the fibres so that it will stay dry.

Polartec uses a different approach to biomimicry. Its 'fluffy' fabric imitates the fur of a husky to keep you warm during outdoor activity. Longer 'guard hairs' on the exterior create loft, while denser inner fibres trap warm air, providing a highly compressible fleece whilst optimising insulation at the lowest possible weight. Polartec Biomimicry fleece was the first fleece made of both short and long yarns on the same surface, focusing on a new dimension of warmth-to-weight ratio. Mountain Hardwear's new Mastiff pullover for men uses Polartec's biomimicry Polartec Thermal Pro fabric designed to imitate animal fur. A lightweight fleece, it is well-suited for backcountry or alpine climbing and includes Polartec Power Dry panels under the arms for increased flexibility, reduced bulk and enhanced moisture transfer.

Green keeps growing

Biomimicry also includes looking at nature in terms of sustainability. "They come in different colours, but they are all green" was the slogan on Polartec's booth at last summer's OutDoor trade show, highlighting the advances made in terms of recycled and renewable fleece and yarn technology. "New recycled yarns no longer have trade-offs in product performance or aesthetics," says Polartec. The limitations forced on fleece some twelve to fifteen years ago in terms of fabric softness and styles are history. Polartec's PCR fleece range covers a dozen fabrics from light to heavyweight, in micro or double velour quality, as pure polyester or blended with wool.



Berghaus' Sangar-Fleece made from Green Polartec.

Berghaus

PCR and sustainability is becoming an issue. Concept III is currently building a total vertical manufacturing plant in Vietnam for its PCR recycled poly-fleece. Pontetorto now offers a polyester Ingeo fibre blend fabric to its customers and Kingwhale has signed a licence agreement with TrapTek that grants the rights to utilise its 'green' technology in its premier fleece.

Winter ispo will see several brands presenting 'green fleece' products or new sustainable ideas. But it will be up to the marketing, sales and retail sectors to generate enough demand for sales and establish ways of taking back used fleece from customers to create a true cycle.

Beyond second layer function

Next to the warmth-to-weight ratio outdoor apparel requires another function to increase comfort and body temperature regulation. It must not only be breathable, but it must almost wick properly. So far, wicking has not been a strong area in fleece fabrics. The fleece structure has limited the possibility of actually attracting sweat and pushing it to the outside and the capillary effect of fleece collects the moisture in the core of the fabric. This is why fleece used in high activity sports with a one-sided fluff and a knit back to enable moisture management are, in fact, not really fleece but merely look like fleece.

Polartec has responded to the demand for fabric capable of wicking moisture with its Power Dry-Series. Strictly speaking Power Dry isn't fleece, but the thicker grid versions of the fabric have a very similar optic to grid fleece and it is even positioned as fleece by the apparel industry. Polartec's product is used in Patagonia's '5Top' and adidas' 'Summit Hoodie', both of which are presented within the company's fleece category—although the term fleece is avoided. Further advances in the field of wicking are sure to come in near future.