**The Challenges and Opportunities ahead for European Tanners and their workforce**

**Michael Redwood PhD, MBA, BSc, FSLTC**

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The leather industry is one that has always been evolving. For a long time it was the first sheet material available to mankind and played a role in all aspects of society and the development of civilisation. Whether it was containing, protecting or transporting, hides and skins provided a vital material made much better as the knowledge of preservation with a tanning process steadily developed.

As new materials were discovered or became more freely available leather has seen its role as an essential material steadily eroded. Paper replaced parchment, metal replaced armour, glass and pottery began to be used for drinking vessels and textiles, first natural but now frequently plastic based, are substituted in most other uses.

As a result leather today works where it has aesthetic and performance characteristics that add value to a product. Tanners now have to remember that in every end use there are other material options for designers to use that are in many instances cheaper and improving technically very quickly.

As a consequence we saw major swings in end use over the 20th century. Some of these were as a result of the replacement of horse transportation by motorised vehicles and others resulted from the development of new materials that were found more effective or affordable. Examples include rubber and plastics for footwear soles and technical textiles for the uppers of sports footwear and for clothing. Developments such as the return of leather to be a material of preference in automobiles in the 1970s were less easy to predict.

While technology is important in the leather industry making products from leather remains labour intensive and as a result much of that activity moved to low labour cost countries taking capacity from the EU. Despite a lot of machinery and chemical development the making of leather and leather products remains very similar today to how it looked over a hundred years ago.

The 21st century has highlighted two points. A recognition that the volume supply of raw material is no longer able to keep growing in line with the growth in the human population and second that there is now a volatility in demand for leather and leather products which looks like it is to be the new normal. We need to prepare for both known and unknown developments.

With this background this paper is intended to identify some of the challenges and opportunities we are likely to foresee over the next decade. Predicting the future is easy, getting it right is not. However, a thorough and continuous understanding of what might happen allows for proper preparation and the building of skills and capabilities to be resilient in the face of change, welcome or unwelcome. Hopefully the paper will stimulate discussion and allow the prioritization of these and other additional ideas.

**The backdrop**

There are number of very distinct changes which are affecting the business environment. These can be simplified to under the headings urbanisation, demographics/social changes, technological developments, which include resource scarcity/climate change. (PWC 2015) These are global trends and their impacts will vary by location. They also overlap making calculating outcomes for the EU complex. Here only some of the more salient points are identified and we do not purport to offer a full examination of every area.

In the past growth of urban centres was mostly related to industrialisation while today it has more to do with wealth generation. For centuries less than 5% of the global population could be classed as urban and only 3% of the population of the world lived in cities in 1800. By 1950 this had grown to 30% and by 2010 it was estimated that 51% of the world’s population were urban dwellers. Two decades of population movement in China was a major driver for this rapid change. In future urbanisation is set to continue even more quickly as city centres are regenerated in the developed world to be better for living, working and tourism and in the emerging market where it is seen as a significant driver of growth. China in particular has placed faster urbanisation as a national strategy.

Defining cities is an imprecise matter. Paris, for example has a city centre with just 2.2 million inhabitants, an urban area nearer 10.5 million and a larger urban zone with around 11.5 million. Urban areas have contiguous built up houses less than 200m apart. Larger urban zone is a definition introduced by Eurostat in 2004 to cover a city and its commuting zone, which while more relevant for our consideration is harder to measure.

Two cities help with understanding here. One is greater Tokyo in Japan and the other is Chongqing in China. Both have urban areas with populations of around 8 million and the greater city area in each case measures 32 million. Yet greater Tokyo is tightly linked with excellent communications and feels very much like a cohesive unit whereas Chongqing is widely dispersed with road and rail links that make getting to some parts difficult. In reality it is a city plus its hinterland although urban planners do now consider Chongqing to be a typical example of a new kind of mega city, paddy fields included. This new measurement has started to place everyone into such a hinterland. Using this approach geographers are suggesting that by 2045, when they expect the world population to have reached 9 billion, we will have 280 of these megacities on the planet with everyone associated with one of them. (Dorling, p 262)

While some of these will be quite dispersed like Chongqing and more like a collection of cities it is expected that the majority will evolve to be tight and recognisable. Already Paris and London effectively count as megacities. The power of London clearly stretches beyond the South East of England into Southern Wales and the South West. Areas such as Rotterdam and Amsterdam are more or less combined in the way that the cities around Tokyo are, and in the Rhine valley and northern Italy we see similar agglomerations. In northern England the government has initiated getting Liverpool, Leeds, Bradford and Hull working more closely together based on Manchester as the dominant centre.

This creates an issue about the management of these large city areas. At the moment waste collection is usually managed at the local level, water regionally and health nationally. These will have to find a new order as will transportation and planning.

Cities have a strong influence on what consumers purchase and consume, and on the size of families. Creative industries do well in cities, as an economy of knowledge requires proximity and density. Cities have become an economic driver with startups, entrepreneurs and companies returning to them as they are more innovative and creative.

Demographic changes are naturally associated with this. The world, apart from India and Africa, is getting older. The combination of a smaller working population and a higher share of retired people will place additional strains on welfare systems. While this is well recognized in the EU it is important to note that China is also impacted and needs to become much richer quickly, before it gets old. Chinese families have far poorer pension and medical provision than in the developed world. Already the number of people in China of working age has started to decline and the cost of manufacturing of many products has been rising steadily. While China retains some large and outstandingly efficient factories it is expected to lose 80m industrial jobs over the next decade. (FT, 2015) Urbanisation is also proven to reduce family size in every part of the world.

One characteristic of most major cities is a zone identified with new arrivals. (Saunders, 2010) Within Berlin it is Kreuzberg, which is a destination for Turkish villagers seeking to live and work in the EU. Similarly Les Pyramides in Evry (close to the urban area of Paris) is home to large number of new citizens from Africa in particular but also from the Indian subcontinent and Egypt. In London it is Tower Hamlets that has become a major destination for Bangladeshi villagers. Worldwide we see the same in Los Angeles where West Adams pulls in villagers from rural locations in El Salvador while Chongqing has Liu Gong Li that has grown out of a tiny village to a major town receiving immigrants from country villages aiming to move into urban jobs in Chongqing. Over the globe the process of urbanization is not simple and straightforward, often involving illegal immigration and very low cost starter cities that are often resented because of the apparent squalor. This is one of a number of elements that are consistent with large urban zones. Another important aspect is that highlighted in one of HSBC’s recent advertisements: "local requirements will define local suppliers".

For the leather industry we have correctly focused in recent years on the huge growth in middle classes with free disposable income, particularly in Asia. The OECD estimate that by 2020 1.7 billion people in Asia will be defined as middle class. At the same time whilst the EU is ageing we do expect the population to remain stable or grow marginally between now and 2025: and it will remain a rich consumer market compared to the rest of the world. We also must consider the high levels of youth unemployment in most EU countries and the rapid turnover in senior managerial positions as the boomer generation retires over the next decade.

In the EU we have a view of technological focus based on robots and advanced engineering. These are not obviously applicable to the leather industry where craftsmanship is important, although some forms of footwear manufacture has used robots and automated systems successfully for many years. This plus other tools such as additive manufacture will help some industries to return to the EU even where important infrastructure and support businesses have been lost. The role of technology is changing. It used to be that IT supported business strategy whereas today IT is shaping business strategy. The leather industry may feel distanced from the world of the US west coast technological giants but Apple, Google and Amazon have and continue to disrupt many industries. In most instances this is done by finding ways to reduce the cost of transaction while incumbent firms stick rigidly to traditional methods. With Apple now entering the luxury goods business and indicating it might enter the automobile sector by 2020 unexpected changes must be anticipated in our industry over and above a clear requirement for further improvements in resource usage and efficiency.

A great deal of effort has been put into the sustainability aspect of the leather industry and while the importance of this at the consumer side does ebb and flow with the economic climate the need for the industry to keep driving forward for improvement remains a key driver. Areas such as water, energy and animal welfare are coming to the fore alongside matters related to resource usage and product end of life.

**Implications for the leather industry**

These developments combine in a variety of ways to impact on the industry of leather.

Leather for automobiles is a major activity for EU tanners so the future direction of transportation is highly relevant. Demographics, urbanisation and technology all overlap in the future equation.

The work being done on self-driving cars and the interest of both Google and Apple in entering the sector have been gathering the most headlines. Certainly with the increasing use of connected technology the services associated with information and communication might become the major source of profit as opposed to the engineered metal aspect of automobile manufacture.

Ignoring the unexpected impacts of such disruptions the car industry can be expected to remain quite strong. The emerging middle classes will continue to want the freedom and mobility offered by cars and many of the elements being developed to permit self-driving automobiles such as self-parking, lane control, automated braking are likely to be adopted quickly and allow the ageing boomer population to remain mobile.

At the same time the attitude of the younger generation towards automobiles, indeed possessions in general, has changed and the interest in driving and owning a motor vehicle has declined. When this is allied to greater urbanisation where the cities have good public transport the drop off in car ownership is considerable – increasingly accelerated by hostile regulations related to the use of cars in busy city centres. Families are now being started at an older age and the traditional move to the countryside is also coming later in life (and in a much less ordered way) than in the past. Those who buy cars later in life drive fewer kilometres per year and are less interested in make and model. On the other hand the rise of public transport has seen an increased use of leather for seating because of its durability and customer appreciation. The greater use of cameras in public transport for passenger protection has diminished the incidence of vandalism helping to make leather more viable.

This fits with a further consumer trend – the growing preference for experiences over physical possessions. The move from goods to services is highlighted by the salient image of the millennial generation being the smart phone whereas for the boomer it was owning the correct model of automobile. This trend is seen in the rise of the coffee shop where finding the money for an expensive coffee remained a priority – somewhere between a necessity and a small indulgence – all through the recession.

In most ways leather fits well with this experiential trend as the added value to consumers of the majority of articles involve touch, look, smell and in certain instances such as interior design sound. In a world of gadgets leather has been found to humanise our lives reducing the harshness of glass, metal and electronics. Hence there is a steady demand for phone and tablet cases made in good quality leather, and for leather to be used in a wider number of areas of interior design.

Some analyst think demand of this nature is based on the increased consumer interest in what is loosely termed as “luxury”. Since the early 1990s when companies such as LVMH introduced new levels of distribution and marketing on top of a revised supply chain structure the definition and role of luxury has become confused. New terms such as absolute luxury and affordable or accessible luxury have been introduced and this has become allied with assumptions that luxury is solely about status. It is now realised that in China status is less of a national characteristic and that worldwide while self-image is important it sits alongside connoisseurship and individuality in reasons for buying luxury.

For absolute luxury the continued growth in high net worth individuals looks likely to continue worldwide at quite a strong pace and to offer good opportunities to well managed brands. The luxury sector involves many product areas from yachts, through watches and jewellery to clothing and footwear. In many of them from private jets through yachts to watches leather manages to hold a significant place, and in the areas of clothing and footwear handbags offer some of the highest and most reliable margins. In fact accessories make up almost 30 percent of the total global luxury market, up from 18 percent in 2003. Mostly this growth has been driven by handbags.

“For consumers, handbags are cost-effective status anchors that can be mixed and matched with other items to suit a wide range of occasions. For brands, handbags offer attractive retail economics, characterised by high sales productivity (sales per square foot) and strong full-price sell-through results”. (BoF, 2015)

As opposed to footwear and clothing handbags do not require to be stocked in multiple sizes and to have changing rooms in stores. Whatever the shape and size of the consumer a hand bag or a man bag will still look good.

One issue with many articles made for the luxury market is very poor cutting value from the leather as the demand for a “defect free” appearance of an airline seat or a ladies handbag is paramount, sometimes more important in the mind of the engineer or designer than the consumer.

From the leather industry stand point the sector which has become known as affordable luxury would perhaps be better defined as the high quality sector. It is the segment where historically consumers would save for an article in order to buy one they felt was reliable. This usually means that the design would be suited for a variety of occasions and would last a long time.

Many articles, including footwear, which fit into the high quality sector, are designed for repair and longevity. This plays into the resource scarcity and sustainability agenda. The last fifteen years has seen an outstanding move by the leather industry to grapple with issues of manufacturing leather in an appropriate way for a world that has become much more concerned about the damage which society has been doing to the planet. This covers pollution as well as the consumption of water and energy and leads through to the end of life issues for articles.

The task is far from complete. Leather today is manufactured in very similar drum vessels that have been used for over a hundred years with an aqueous based system that has been largely unchanged for many centuries. In processing methods and chemicals used there is much to do. At the same time large parts of the world still do not come close to acceptable standards for manufacture and as well as being damaging for the workforce and the environment this greatly harms the image of leather with consumers and designers. This gives fuel for attacks on leather that are increasing from the vegan and animal rights side who are often encouraged by plastic alternates whose marketing has become skilled at passing their materials off as leather.

**The EU Leather Industry**

Many of the developments we can expect have already been signposted but before laying them out more clearly it is important to start with a view of the leather industry in total and not just tanning in isolation. The value added occurs disproportionately along the chain for different articles. The European luxury goods chain was reorganised in the 1980s and 1990s so that the leather goods businesses started to take control of their own retail. This gave access to the higher margins available at retailing when well done and to better control of how the consumer interfaces with the brand. Since branding has become much more important in the last 25 years this was a clever and timely move.

When full consideration is given to the value chain the raw material in Europe is particularly important. Climate and husbandry means that in general all raw material types produced in Europe are of the highest quality and in particular the EU is famed for its calfskins and some of its lambskins.

This raw material is particularly suited to the high value end uses which can accommodate the European cost structure so the industry has available a raw material suited to adding value regionally. However the amount of red meat being consumed per capita in Europe is declining gradually and land pressures are such that it is likely we shall see raw material volumes reducing rather than expanding. For future security tanners must work with farmers, abattoirs and meat companies to secure supplies and support husbandry and slaughter which maintains hide and skin quality.

This closer linkage within the supply chain has started to happen through acquisition in the luxury goods trade, where there are complex motivations related to retaining skills and access to different raw material. A number of brands now identify the individual farms from which the leather in their products are sourced, which was a concept introduced in the volume market with New Zealand merino wool using what was called a “baa” code.

In other instances tanners in the automotive and furniture trade have long been involved in cutting leather and have generally found it advantageous in reducing waste. Increasingly tanners are establishing leather goods ranges to use leathers that are difficult to sell and are selling them through on line or other channels designed not to clash with their other customers. There is some thinking, certainly related to the bigger international footwear brands, that tanners will start to cut leather for them in future years.

With overseas competition improving rapidly in aspects of design and quality, added to ever increasing efficiency the utilisation of leather and the transaction costs at each stage in the chain are areas that must be addressed if the EU is to remain competitive. Just because China has started to become more expensive and brands are considering returning some production to the EU will not legitimise continuing old ways of working. Only a few brands have the power to charge whatever price they wish for products and tanners will continue to function in a highly competitive environment. We can anticipate considerable competition arising from Brazil, Turkey, India and a number of African countries that have already established strong positions in the global industry.

This means that more advanced industrial engineering and processing management skills will need to be introduced to the industry. Key account management and servitisation are discussed in business-to-business marketing but are rarely applied correctly in the leather industry. One problem with this is that partial implementation without both parties reaping the benefits usually results in an increased cost rather than the reverse. Currently much of the leather industry involves significant amounts of double handling, double-checking and unplanned shipments of goods. This could hugely benefit from implementation of some form of vendor managed inventory as seen in the leather chemicals industry but rarely used with leather.

It will become vital that in the EU we start to look at these more advanced production methods and use them to offset the high cost involved in retaining the high employment levels available in the manufacture of finished products. In almost every instance they lead to closer business relationships that improve forecasting, predictability, reduce waste and create opportunities in areas such as the faster speed to market of new products.

The opportunity clearly exists for the EU to capitalise on its raw material to make leather and finished articles in every category from that leather within Europe, and to have the opportunity to benefit from a kernel of affluent customers from a significant EU population of wealthy households. All of the aspects of traceability, authenticity, quality control and creative input in design and marketing can then harnessed together. If we add the missing production engineering skills that only tend to be seen in some automotive scenarios keeping this structure strong and competitive should be possible.

Indeed there is already some evidence that there is a shortage of capacity to handle enough of the raw material produced in the EU, especially in the northern areas where wholesale tannery closures mean the export of large amounts of raw material. Environmentally shipping hides and skins in the salt is wasteful in terms of transportation with 600 raw hides taking the space that could hold 2000 in the wet blue and it creates the issue of overuse of salt, which is often difficult to handle. While there is a psychological barrier for some industry participants to return to a growth mentality looking forward we can foresee a need for more tanning capacity rather than less. Brands have recognised the value of their home country manufacture and the difficulty of controlling and guaranteeing a supply chain that is global. While leather is not suited for the aspects of fast fashion that imply a disposable society, the aspects of fast fashion that involve better customer offers through shorter runs and faster response times looks to have established the future pattern for our industry. The idea of two year lead times and ordering very large volumes with 30 day shipping from Asia is no longer an accepted standard for a huge number of products and so the location of manufacture thinking prompted by Chinese cost increases now involves other dimensions. Large volumes planned effectively two years ahead will usually create the need for large stock write downs and other issues. Looking forward it is envisaged that large urban zones will each require some significant element of tanning capacity to manage raw materials produced and offer supplies to local businesses.

Allied to the application of business process engineering and a business model that offers a better brand story is the advance of technology. The constant pressures on pollution, where it now appears that technology has moved on enough to allow Europe to easily supersede other geographic locations from processing techniques and from an environmental point of view, has to be a crucial element of our industry going forwards. Proper effluent treatment, BATNEEC principles (Best Available Technology Not entailing Excessive Economical Costs), closed-loop water usage are all possible, particularly in the EU, and this should effectively become mandatory for our industry to survive. While internationally we see good legislation and many excellent tanneries overall the management and legal enforcement is very patchy and EU excellence throughout as a given is now essential.

The beamhouse is still the worst area for potential pollution, so therefore has the greatest opportunity. It seems curious that we still produce leather in aqueous systems that we know to be inefficient with a long tail of time being used to get the last few percent of the chemical into the leather and avoid it going into the waste streams. While there are rapidly improving research institutes around the world at the moment the creative minds with the capability to actually find new ways to process leather sit within our tanning, educational, chemical, machinery companies and test houses. We should not allow the industry to reach 2025 with the bulk of our leather being unhaired, limed and tanned in the conventional way. Certain product types rely on traditional processing methods for their integrity but everyday footwear and upholstery leather is an industrial process that needs to be done more efficiently.

In looking at this technical area we have to consider what is happening alongside our industry in areas such as bioengineering. We have seen materials where leather or splits are heavily coated or laminated, or where reconstituted fibres are built around plastic structures. These sorts of developments will no doubt continue yet more disruptive is the concept of cultured leather and meat using fetal bovine serum, a fluid derived from calf fetuses, to build leather in 30 days. This has already passed proof of concept.

It is likely that those outside our industry such as these bioengineers will look at how to hybridise leather with other materials at the molecular level. Rather than watching this process from the outside and reacting to it, should the leather industry not become involved? It does look as though our raw material could be transformed going forward and using novel manufacturing techniques leather might begin to enter a new phase of utilisation in consumer and industrial products.

All this means that our industry will have a great need for educated staff at a wide variety of levels. Inside much of Europe right now there is a deficiency in those who can cut leather and sew it efficiently on industrial machines. Not all Europe’s leather products can be hand crafted individually so there will be various levels of leather handling and production skills required. In some parts of the EU, but not all, the workforce doing these jobs is getting elderly and to secure the industry’s future apprenticeship schemes, short courses and in house training is required.

More advanced training is required to cover production engineering and supervisory tasks and it has become apparent that we are not training enough leather chemists and tannery technicians to handle the replacement needs of the industry as the demographic bubble of the boomer generation retire over the next 5 to 10 years. Their departure will lead to a great loss of industry knowledge. In addition there are more jobs opening up in the chain from abattoirs to retail where those with leather technology skills are required. Further we have many new jobs for environmental management, chemical engineering, laboratory work and advanced research.

There is also a need for well-trained fashion and product designers who understand materials better, are able to comprehend and work with end of life concepts and ideas such as cradle to cradle. The artistic and creative side of leather making must not be overlooked. We are short of support for designers who want to start up in the leather business and more mentors and prototype facilities need to be available for them. Tanners will have to be able to work closely with designers to make much better use of all leather types and all characteristics and to work together on areas such as the expected life of an article, how it might be repaired and what should happen at the end of its life.

Given the complexity of matters in the world related to people, politics and technology the leather industry is far more embroiled on multiple levels, whether environmental, economic, currency, livestock or an increasingly anti scientific world. This means the business has changed, and is now extremely complex compared to yesteryear when it was a simple case of getting leather limed and tanned properly when it would usually sell for decent margins. In an industry that is now so complex we need to attract skilled and intelligent leaders.

In a faster changing world our tanneries will need to be ready to respond and change as never before. In urban areas with good public transport, which is increasingly what we are seeing, there will be fewer automobiles and more trains and buses. Our upholstery industry will need to be ready to adapt.

In an urban landscape with small apartments engendering less interest to buy things that are difficult to store, and much more interest in experiences we can expect leather in furniture to have new expectations compared to that just used in homes. Leathers will need to adapt for new end uses in interior design. We should be ready to develop and promote the experiential aspects of leather from a consumer point of view rather than the tanner’s perspective alone.

An urban community loses touch with the origins of leather and consumer research in China and Germany has already demonstrated this disconnect. More resource will need to be put into educating new younger consumers about leather, perhaps in some instances alongside the meat industry. On the other hand the leather industry requires a better understanding of the market forces that make leather desirable.

Our industry needs to build on our historic knowledge and innovation. By doing our work to the highest standards and striving to improve them we have the chance to underline the value of leather as a green, resource efficient material. By linking up the value chain using the best business process engineering we can not only ensure competitiveness but also maintain useful levels of employment in most regions of the EU.

**Recommendations**

1. Consider the value chain from raw to finished article as something that should as far as possible be maintained in the EU in the interests of traceability, authenticity, quality, brand story, environmental benefit and efficiency
2. Build closer relationships at every stage in order to reduce transaction costs, remove unnecessary handling, double checking and work together for improvements, including with raw material
3. Work harder to capitalise on the high quality European raw material and closer with farmers and abattoirs to improve it, linking it through to finished products as suited
4. Instigate more determined and ambitious research to advance leather technology beyond its current historic aqueous systems; building on the fact that the most innovative chemical companies and machinery businesses are in the EU, alongside some of the best research bodies
5. Examine and strengthening training and education at every level, with greater integration into the industry network with further development of courses tailored to meet the pressures on industry in terms of time and cost
6. Reduce the amount of untreated raw material leaving Europe
7. Seek to make more local leather available for manufacturers within the EU

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