RICHES is a research project funded by the European Commission (EC) within the 7th Framework Programme in the domain of Socio-economic Sciences and Humanities. Its main goal is to examine opportunities, processes and strategies for reducing the distance between people and culture and recalibrating the relationship between heritage professionals and heritage beneficiaries. This would maximise cultural creativity and ensure that the European community could benefit from the social and economic potential of cultural heritage.

One of the objectives of the RICHES project is to examine the factors, conditions and processes underpinning the reconciliation of culture, creativity, and economic and employment growth. It specifically addresses craft-related knowledge and skills as emblematic instances of practices that embed a social, historical, cultural and economic value. Starting from the observation that craft knowledge and skills in Europe are often endangered, the project sought to understand whether and how these can be revived not as cultural instances to be safeguarded, but as significant drivers for stimulating creativity, spearheading innovation and generating economic value and new employment opportunities. Special attention was given to the role that digital technology can play in these processes. The research carried out demonstrates that rather than undermining the value of craft and craft skills, digital technologies can be used strategically to drive innovative craft practice. This would be achieved through enhanced creativity and customisation, by communicating product features to a global audience, supporting innovative business models, and fostering the transmission of knowledge and skills through new online channels and informal educational processes.

This policy brief makes recommendations for unlocking the potential of the craft sector and craft skills, with a focus on maximising their economic value without undermining their social and cultural value. Policy recommendations are formulated from an holistic perspective, which recognizes the interplay of social, cultural, economic, legal and technological dynamics in
determining the standing of craft, and realising its potential. They are thus aligned with a series of recent policy initiatives, resolutions and action programmes of the European Commission that acknowledge both the potential of the digital for socio-economic development, and the importance of endorsing ethical, environmentally friendly and sustainable approaches to economic growth and business innovation:

- The European Parliament resolution *Towards an integrated approach to cultural heritage for Europe* acknowledges the value of craft as a form of intangible cultural heritage and asks for its preservation and promotion. Moreover, it points to the role of heritage resources in creating value for the European economy, contributing to skills development and economic growth, for instance through cultural tourism (European Parliament 2015).
- The recent EC policy initiatives and actions on the circular economy advocate more sustainable use of resources and ultimately a reconfiguration of the way the European economy works, putting reuse and sustainability at the centre of business models and economic products lifecycles (European Commission 2015). Craft businesses operating on local resources, using environmentally friendly and salvaged materials, and encouraging sustainable and ethical consumption provide an example of how productivity, business innovation and environmental protection can be reconciled (Brown 2012).
- The EC Digital Single Market strategy¹, in particular the priority policy area *Digital as a driver for growth*² promotes the view that all European industries would benefit from transitioning to a smart industrial system. The policy area *Better online access to digital goods and services*³ points to the wide-ranging benefits to be gained from bringing down barriers to cross-border online activity and e-commerce, encouraging transnational transactions and business operations. As the research underpinning the policy recommendations in this brief demonstrates, craft is one of the economic sectors that is benefitting significantly from the integration of digital technologies at all levels from design and production to marketing and sales, as testified by the rapid ascension of craft businesses thriving on e-commerce or combinations of traditional and e-commerce. These benefits would be proportionately widened by endorsing the recommendations formulated under the Digital Single Market strategy.

**Evidence and Analysis⁴**

Craft in the creative economy

Craft brings together “a distinctive set of knowledges, skills and aptitudes, centred around a process of reflective engagement with the material and digital worlds” (Schwartz and Yair, 2010) and is characterised by the application of haptic skills and manually controlled tools (Jennings, 2012). According to the degree of original design, creative intention and cultural embedding of craft activities and products, a distinction is made between *contemporary crafts* – drawing on original designs and valuing the maker’s artistic intervention, and *traditional or heritage crafts* – using inherited techniques and designs and valuing authenticity rather than originality. However, in practice the lines of distinction between contemporary and heritage crafts are blurred, with numerous cross-linkages across the two.

Craft has a strong cultural, creative and economic component, and is generally considered to be part of the cultural and creative industries (CCIs). However, its position varies according to definitions and frameworks, and it is often grouped together with design, visual and/or applied arts. The UNESCO Framework for Cultural Statistics (2009) lists together ‘Visual arts and crafts’ as one of six cultural domains, comprising fine arts, photography and crafts. The European Statistical System Network on Culture (ESSnet-Culture 2012) lists ‘Arts Crafts’ as one of the 10 cultural

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¹ http://ec.europa.eu/priorities/digital-single-market_en
³ http://ec.europa.eu/priorities/digital-single-market/better-online-access-digital-goods-and-services_en
⁴ For detailed findings please consult the research report Woolley et al. 2015. *The Use of Craft Skills in New Contexts*. RICHES project deliverable D5.1.
domains identified, characterised by closely linked functions of creation and production. The craft sector and craft practitioners are also positioned differently within classifications based on national frameworks, not all of which acknowledge the position of craft as a distinctive sector. For instance, in some economies such as Romania and the Netherlands, craft is clustered together with other ‘skilled trades’ - professions requiring specialised skills and applied labour.

The economic value of craft

Several national studies attest to the contribution of craft to the economy, through quantifiable measures such as employment, Gross Value Added (GVA) and number of businesses. In the United Kingdom (UK) in 2012/13, 43,250 people were registered as employed in craft industries and the number of craft businesses was estimated at 11,620\(^5\) (TBR 2014). An additional 9,630 craftspeople worked in different CCI sectors, and 96,360 in other economic sectors. The contribution of craft businesses to the UK economy was estimated at £1.9 billion in turnover and £746 million in GVA, while craft occupations generated a GVA of £243 million in other creative industries and £2.41 billion in economic sectors outside the creative industries. Overall, considering economic outputs of craft industries and craft occupations in other economic sectors, the contribution of craft to the UK economy amounted to £3.4 billion (Ibid.).

The economic value of craft remains difficult to calculate and compare across European nations for various reasons: first, frameworks for defining and mapping craft activities differ; secondly, many studies focus on the craft sector, whereas as the figures above for the UK show, the contribution of craft to the creative economy (based on craft-related occupations within and beyond the CCIs) far surpasses the contribution of the craft sector on its own (craftspeople and support people); thirdly, a fair view of the value generated by craft is evidenced by considering impacts that are not quantifiable or difficult to quantify. These include contributions to local development with spinoff effects in local economies, enhancing creativity, spurring innovation and augmenting competitive advantage through the transfer of craft skills in different economic sectors.

The decline of European craft

In modern consumer societies, the availability of affordable, mass-produced goods has seriously reduced the potential market for the hand-made to a niche position. This has placed craft in a vulnerable position, with some types of craft – especially heritage craft – being particularly affected. The factors that influence the decline of craft vary across European countries, and include:

- Drastically reduced market demand, as consumers opt for cheaper or imported products;
- Competition with imported products, especially cheap products produced in Asian countries;
- The regression of the workforce, as skilled craftspeople get older, and younger generations demonstrate little interest in taking up these professions, often considered unprofitable;
- The globalisation of the economy, which has led to a general reduction in production activities and their commercialisation, for both internal and export markets;
- The rise in the cost of raw materials, especially ‘natural’ materials (e.g. wood, silk, cotton);
- The lack of fiscal and government incentives to support craft production and entrepreneurship;
- Lack of access to start-up finance for craft businesses;
- An ‘image problem’ that associates craft only with heritage and the past, and dismissive attitudes towards tacit knowledge which make it unattractive for young people choosing a profession in advanced economies such as the Netherlands (Klamer 2013).

Key drivers for a craft revival

Notwithstanding the gradual decline of craft in many European economies, there is a counter-balancing phenomenon of revival manifested as:

- A resurgence of interest in craft skills and a Do-It-Yourself (DIY) culture and ethic;
- The emergence of digital fabrication and hybrid forms of making, spearheaded by online and offline maker communities;

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\(^5\) This number includes unregistered micro-businesses below the VAT threshold, which are usually not registered in official statistics. (TBR 2014).
• Rising consumer demand for unique, customised or bespoke products;
• The contemporary reinvention and repositioning of craft skills, techniques, patterns and materials, and their augmentation through the integration of digital technology; and
• The promotion of ethical approaches advocating sustainability, ecologic use and local production and development.

The revitalisation of craft can be encouraged by a complex set of social, cultural, and technological factors. Four of these deserve particular attention for their capacity to be used as key drivers for increasing the value of craft and strengthening its position in European societies and economies: the maker movement; digital technology; the transfer of craft skills to other sectors of the economy; and cultural institutions.

**The maker movement**

The contemporary maker movement started as a wave against mass production, corporate uniformity and consumerism, promoting values of simplicity, sustainable living, and individual creativity and design. Powered by the capacity of the Internet to connect online communities, buyers and sellers, the maker movement has now become a worldwide phenomenon claimed to be at the forefront of a new industrial revolution—the makers’ era (Anderson 2014). The subsequent impacts on the craft economy are directly connected with the maker movement, such as: recalibrating retail by enabling direct relations between makers and a global consumer market; reviving interest in craft skills and craft products; strengthening the position of the maker in the economy by opening up new digital business models; creating new opportunities for learning, networking, skills development and transmission; and contributing to the democratisation of design, with patterns, techniques, tools and resources being freely exchanged, and consumers often involved in the co-creation of products and services.

**Technology-driven innovation in craft practice**

The integration of technology within craft practice can affect virtually every aspect of the craft product lifecycle, from conception and design to final sale, bringing varied impacts according to the level at which it is integrated. Integration of new technologies in design and making processes can contribute to enhanced efficiency, creative opportunities, interactivity, and the customisation of products. A wide range of established and emerging technologies can be used ranging from computer-generated imagery (CGI), laser cutting, Quick Response (QR) and additive manufacturing (e.g. 3D printing).
Digital media can be employed for more effective product communication, marketing and distribution, contributing to communicating value and brand image-building; opening new routes to (global) markets and new opportunities for engaging with customers and communicating and networking with peers.

Elements of innovative business models are offered by technological integration at all stages in the product lifecycle, from design to final sale. By integrating new technology, such as laser cutting and additive manufacturing in the conceptualisation, design, and making stages, makers can speed up production processes, innovate through new product development and address different consumer markets. Further into the product lifecycle, makers can build their businesses around innovative models drawing on e-tailing and capitalising on the potential of the Internet for communication and promotion. E-commerce (through online marketplaces, social media sales pages, or one’s own e-commerce website) offers makers the opportunity to access global markets while maintaining local production. Micro-businesses selling online require little start-up capital and offer employment flexibility, particularly to women who often have to balance work, income and family.

Further possibilities are opened up by employing digital technology strategically to enhance the effectiveness of collective business models or to boost local economies that rely significantly on craft. By promoting joint ownership, shared resources and the cross-fertilisation of knowledges and creativity, collective business models such as social enterprises and cooperatives are significant catalysts for local enterprise, especially in areas with a high craft density (Brown 2012). Craft towns and villages take collective models a step further. Leveraging local craft traditions and tourism opportunities, they provide important contributions to rural economic development, boosting employment and encouraging the expansion of other local trades. Digital media can be used, therefore, for the design of integrated services, as platforms for the promotion of unique place identities, and for positioning makers and their products.

The transfer of craft skills to other economic sectors

The contribution of craft extends to many other sectors of the economy, both in the CCIs and non-creative sectors. This contribution can be seen two ways: first, through a broad influence that can take effect in the way products are conceived, designed and presented to customers, as well as in educating and shaping customer tastes thus indirectly impacting upon market demand; secondly, through interventions in specific sectors of the economy, where craft-related knowledge and skills are employed. The territories open to craft intervention range from luxury goods manufacturing to fashion, architecture, automotive, tourism and furniture industries. In many of these industries, production processes are automated, and craftspeople can bring distinction and competitive advantage by creating unique, one-offs or limited editions. Their roles in these contexts can range from maker to advisor, consultant or educator. Many of the makers involved typically hold portfolio careers, and maintain their regular practice or businesses while taking these jobs (Schwartz and Yair 2010).
The role of cultural institutions

Cultural institutions and craft have an historical relationship that is gaining momentum and is becoming increasingly important, albeit insufficiently exploited, in the context of craft revival. In particular, the museum performs three key roles: 1) An educational role - through their collections, exhibitions, learning programmes or multimedia artefacts, museums are essential actors in the transmission of craft and design knowledge and skills, and open spaces for critical reflection on the socio-cultural value and current status of craft; 2) A creative and inspirational role - they encourage contemporary creativity and innovation which can draw inspiration from or build upon traditional knowledge, artefacts and ways of making; and 3) An economic role - they support the craft economy by offering a retail venue for craft objects and, through association with museums brands, contribute to their selective positioning and contemporary relevance. To capitalize upon the potential of museums for supporting crafts along these three axes, some of the most rewarding models are based on collaborations (especially with educational institutions) by which knowledge and preserved artefacts are analysed, interpreted and used as a source of inspiration for contemporary creative expression.

Barriers to realising a craft revival

Classification frameworks: In some European economies, craftspeople and skilled industrial workers are grouped together in occupational classification systems as ‘skilled traders’. The distinction is further blurred when the term ‘craft’ is used to refer to skilled trades such as roofing and plumbing in the building industry (Dodd 2013). This makes the contribution of craft to the economy difficult to quantify, moreover it affects the adequacy of policy and funding decisions in relation to craft.

Makers’ access to information, technology and training: the integration of digital technology requires access to devices, infrastructures and specialised skills, ranging from the sophisticated required for CGI and 3D printing, to the more basic digital, entrepreneurial, marketing and communication skills for e-tailing. These are difficult to access especially for heritage craftspeople, many of whom work in rural areas.

Access to markets: while digital technologies and the Internet carry with them the promise of accessing global markets, these are not always easily accessible, especially for makers in rural areas. Operational challenges, such as the transportation of goods and obtaining consumables, also add to the challenges related to lack of access to technologies and training in their use.

Lack of reliable evidence on the economic value of crafts: there is a scarcity of both quantitative and qualitative studies that testify to the economic value of crafts in national economies and at European level. Creating a reliable body of evidence is important for assessing the dynamics between investment and returns when considering encouraging the development of craft.

Lack of synergies, exchanges and skills transfer between craft and other economic sectors: the contribution that craft can bring to other sectors of the economy is heavily underexplored. At the lowest level, there is a lack of awareness around the distinctive contribution that craft can bring to other economic sectors.

Lack of appropriate accreditation systems for traditional and contemporary craft skills: two issues deserve attention at this level: first, the models for skills transmission based on master-apprentice relationship and other informal education models, are generally not certified despite their educational effectiveness; secondly, manual skills for producing craft objects that are relatively quickly learned are often conflated with high-level skills that take many years of enduring practice and learning to master. This is significant in the light of the value and competitive advantage brought by high-level skills, often transmitted through master-apprentice models and nowadays increasingly endangered.

Policy Implications and Recommendations

The research conducted in the RICHES project framework showed that in the process of shifting towards knowledge-based economies, established, traditional knowledge is relevant and can coexist productively with new knowledge. Rather than undermining its status, digital technology in
conjunction with the maker movement has served to reposition craft in the economy and contribute to increasing the value of craft products. It has the potential for further strengthening the link between the past (heritage, traditional craft) and the creative future; the power of creativity can infuse all segments of society within and beyond the creative industries. To widen the scope of these positive impacts, a series of recommendations is provided in relation to three, key aims focusing, in turn, on 1) craft as a sector, 2) the makers, and 3) craft skills.

**Key aim 1: (Re)position craft as an independent sector of the creative economy and build synergies with other cultural and economic sectors.**

Specific recommendations addressing European and national policy-makers:

1.1. *Establish the place of the craft sector and craftspeople as distinctive from design, applied arts, and other skilled trades.*

The distinctive position of craft needs to be appropriately recognised in European economies, and distinguished on the one hand from design and applied arts, and on the other from other skilled trades. A best practice is offered by France, where the so called 'Métiers d'Art' are distinguished from other skilled trades by a new law passed on 18 June 2014, which acknowledges the contemporary value of craft skills as well as their artistic contribution to the preservation, transformation, and restoration of cultural heritage (Article 22, law n° 2014-626, 18/06/2014). To underpin this, a shared definition of 'craft' as a distinct sector should be developed, which addresses both historic and contemporary contexts and is distinct from, but complements, design, visual and other applied arts.

1.2. *Position craft beyond the maker and workshop-based paradigm as a stepping stone to widening craft influence and interventions in manifold economic domains, from fashion and design to tourism and architecture.*

A strategic approach to craft skills-transfer to other economic domains requires changing the current limiting view of craft as embedded in the maker and workshop-focused paradigm, instead recognising the added value that it can bring to other sectors, if exchanges and synergies are cultivated.

1.3. *Generate awareness of the value of craft knowledge and skills for European societies, cultures, and economies among appropriate policy, civil society and industry stakeholders.*

Documenting and disseminating evidence around the value of craft, experimental initiatives, and successful ventures can contribute to innovation at national and pan-European level by:

- Creating a European evidence-base for the economic contribution of craft, including documented best practices and experimental ventures; and
- Ensuring dissemination among appropriate stakeholders in the industry and for makers themselves.

1.4. *Encourage synergies and exchanges between the craft sector, cultural sectors and other sectors of the economy.*

Clusters, collaborations and joint programmes that involve entities from the craft sector as well as from cultural and/or economic sectors are fields ripe for innovation. They can boost competitive advantage for a varied range of industries, evolve new solutions to old problems, and contribute to sustainable development that addresses the cultural and social considerations beyond the purely economic. Some of the most promising are forms of association and collaboration that include institutional entities that are custodians of craft knowledge (e.g. museums) and those operating at the forefront of innovation in the creative economy, such as technology companies. Links between education, craft practice and cultural heritage can be promoted through creative and educational collaborations between museums and educational institutions, such as fashion and design schools.

**Key aim 2: Strengthen the position of makers in the creative economy, with a focus on supporting individual and collective business models and capitalising on the potential of localities with a strong craft tradition.**
As a tacit knowledge-based tradition, the value of craft resides firmly in the people who possess, embody and apply a complex range of knowledge, skills, techniques and sensibilities towards materials. Investing in makers and strengthening their economic standing and influence is essential for a craft revival.

Specific recommendations addressing national and local policy-makers:

2.1. Recognise the critical importance of micro-businesses for the craft sector, and encourage their foundation and development through favourable fiscal policies and subsidies.

Micro-businesses are the most widespread business models in the craft sector. Despite the recent boom in such businesses encouraged by digital advances and the maker movement, their long-term viability is not guaranteed. These are models largely dependent on individual talent and creativity, but are often financially unstable and consequently easy to disrupt in the face of economic crisis or fluctuations in demand. Favourable policies can encourage start-ups and can further support their sustainability by supporting makers in times of temporary crises such as lower demand.

2.2. Encourage collective business models, networks, and partnerships that can (re)link heritage makers to the craft products value chain and enhance access to markets, with particular attention to craft-intensive localities and regions.

Collaborations and partnerships are essential for moving from what are often small-scale or individual craft practices to initiatives with a wider and more sustainable scope. Moreover, partnerships and craft collectives can benefit individual makers who cannot set up and sustain individual micro-businesses. These forms of association and partnership should be supported, particularly in areas with a strong craft tradition, where strengthening the economic standing of makers may well have a positive effect on the local economy.

Key aim 3: Encourage the transmission, recognition and accreditation of craft knowledge and skills gained through various formal, informal and non-formal learning approaches.

The advent of the contemporary maker movement and the new possibilities opened up by digital technologies have widened opportunities for transmission of craft skills, offering new spaces and formats, from Fab Labs to online communities. These are informal, bottom-up, community-led and responsive to developments, needs and requirements from the job market. Their capacity to contribute to skills-building following the needs of the economy should be leveraged. At the same time, attention should be directed at sustaining traditional skills that continue to be relevant, with particular attention to recognising and accrediting high-end skills, acquired through long-term, committed craft practice.

Specific recommendations addressing European and national policy-makers:

3.1. Encourage links between informal educational organisations (e.g. Fab Labs, museums), the formal education sector and appropriate industry sectors, to identify in-demand skills and changes in skills, and balance the educational offer in response to job market potentials and requirements.

3.2. Work towards appropriate accreditation systems for craft skills that recognize both high-level skills and skills that have been acquired through informal and non-formal learning engagement.

RESEARCH PARAMETERS

The main goal of this study was to shed light on how craft skills used in new contexts can generate value and competitive advantage for the European economy, particularly with respect to employment and the creation of new jobs. Two pathways for value generation were prefigured and then examined: through the integration of new technologies to configure new ways of exploiting craft skills and through the transfer of sector-specific skills to other economic sectors, with a focus
on design and fashion. In relation to this, the study assessed the role of digital technologies and informal educational opportunities for the transmission of craft skills.

The study captured a European dimension in order to contextualise and give salience to findings; it included empirical research in three countries - the Netherlands, Romania, and the UK. The intention was to cover varied economies with a sizable difference in the way craft is positioned – socially, politically and economically in particular.

Research was conducted in parallel across four strands, through a combination of desk and empirical research as follows:

1) The European CCIs and the role and status of craft skills in the CCIs and the creative economy were examined through desk research at European level and the assessment of specific country-based studies, and empirical research in the Netherlands, the UK, and Romania. An important aspect was the assessment of the impacts associated with the integration of digital technology in craft practice. Empirical research was carried out by means of:
   - An online questionnaire aimed at traditional UK craft practitioners, which probed their professional activities, attitudes and detailed views on the transferability of their skills/knowledge, their deployment of digital technology and their future plans.
   - Face-to-face interviews with Romanian makers and designer makers.
   - Expert interviews with experts in craft, design, fashion, and museums in the UK, the Netherlands and Romania.

2) The role of interest-driven learning and DIY arts and crafts movements in the transmission and revival of traditional skills was analysed through desk and case study research.

3) Notions of digital craftsmanship and the educational potential of a ‘learning by making’ paradigm were examined through desk research and case study inquiries in the Netherlands. The research focused on digital fabrication cases, including the WEAVE European project (zigzagproject.eu), Fab Academy and Fab School.

4) The role of cultural institutions in the revival and transmission of craft-related skills and in the craft economy was investigated through desk and interview-based research in the UK and the Netherlands. Interviewees were selected from museums with different profiles, ranging from ethnographic to folk art museums.

Results from the strands identified above were analysed comparatively and tested through a final round of desk research, to probe emerging findings and understand the potential scope for their application.
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RICHES: Renewal, Innovation and Change: Heritage and European Society

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