How digitalization will shake up apparel industry?

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Contents

- DICI project
- Digitalisation
- Big Data
- Mass customisation and customer view

Photo by Clark Street Mercantile on Unsplash

DICI – Competitiveness from digitalisation in clothing industry

- Develop and create new concepts to customer interface
- Validated Pilots
- Leveraging the effect of digitalisation via new business models
- Roadmap for boosting

the international growth

23/01/2018

Photo by Igor Ovsyannykov on Unsplash

Digitalization and digital transformation

- ***Digitalization*** refers to "the adoption or increase in use of digital or computer technology by an organization, industry, country, etc." [1]

- ***Digital transformation*** is defined as a change to models of working, roles and business offerings, occasioned by the adoption of digital technologies by an organisation or its operating environment [2]

- 4th industrial revolution

[1] S. Brennen and D. Kreiss. (2014). *Digitalization and Digitization* [Online]. Available: http://culturedigitally.org/2014/09/digitalization-and-digitization/

[2] P. Parviainen, M. Tihinen, J. Kääriäinen and S. Teppola. 2017. International Journal of Information Systems and Project Management . SciKA. Vol. 5 (2017) No: 1, pp. 63-77

How digitalisation changes business

- Big data, analytics and AI
- OmniChannel and hyper connected solutions
    - shop from anywhere, compare and consume media
- 3D design and no physical samples
- Production digitalisation, digital libraries etc
- Wearables and e-textiles
- Sustainbility: fibres, circulation economy, produce less

New customer - millenial

- Empowered by new technology
- Hyperconnected
- Engagement by the social media content
- Active player vs passive shopper

Research Priorities of the European textile and clothing industry

- Towards a 4th Industrial Revolution of Textiles and Clothing *A Strategic Innovation and Research Agenda for the European Textile and Clothing Industry* by ETP

- Smart high performance Materials
- Advance digitised manufactuing, value chains and business models
- Circular Economy and Resource Efficiency
- High value added solutions for attractive grov markets

Near future trend of Finnish clothing and textile industry: Utilisation of digitalisation
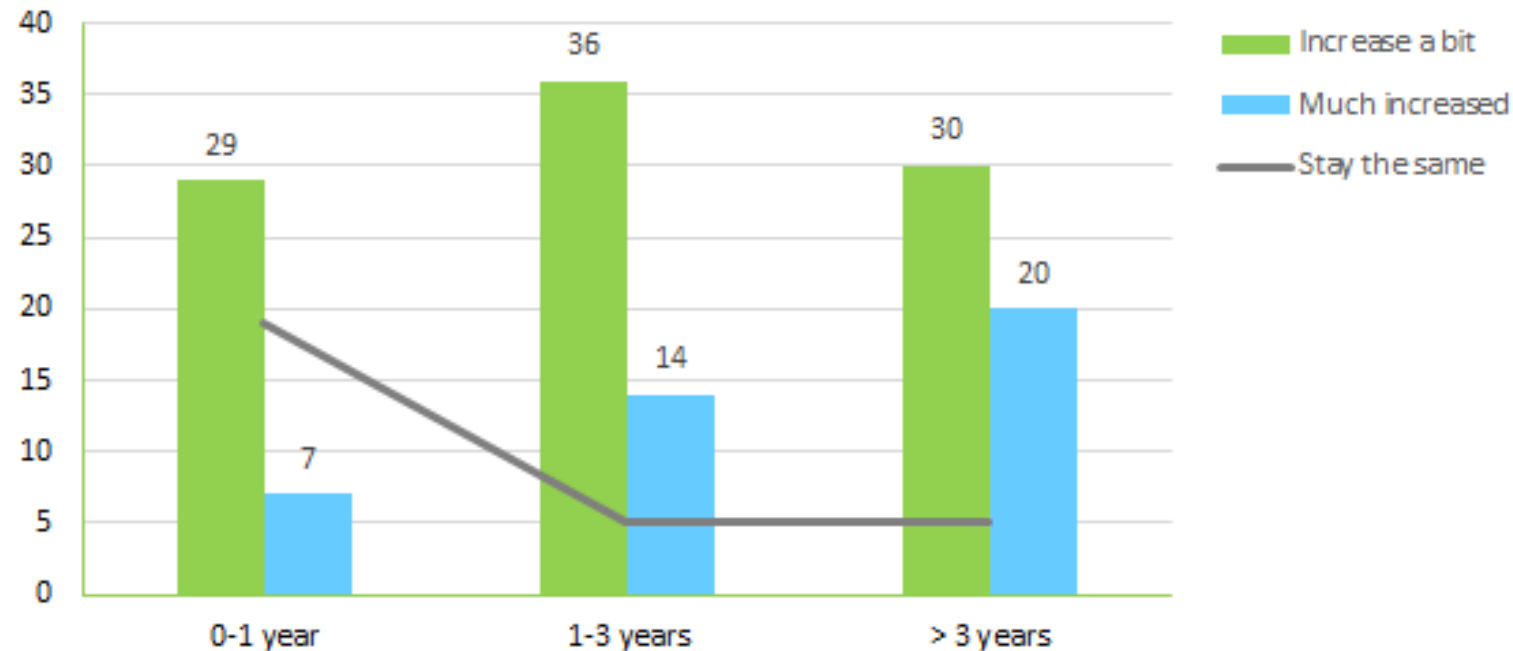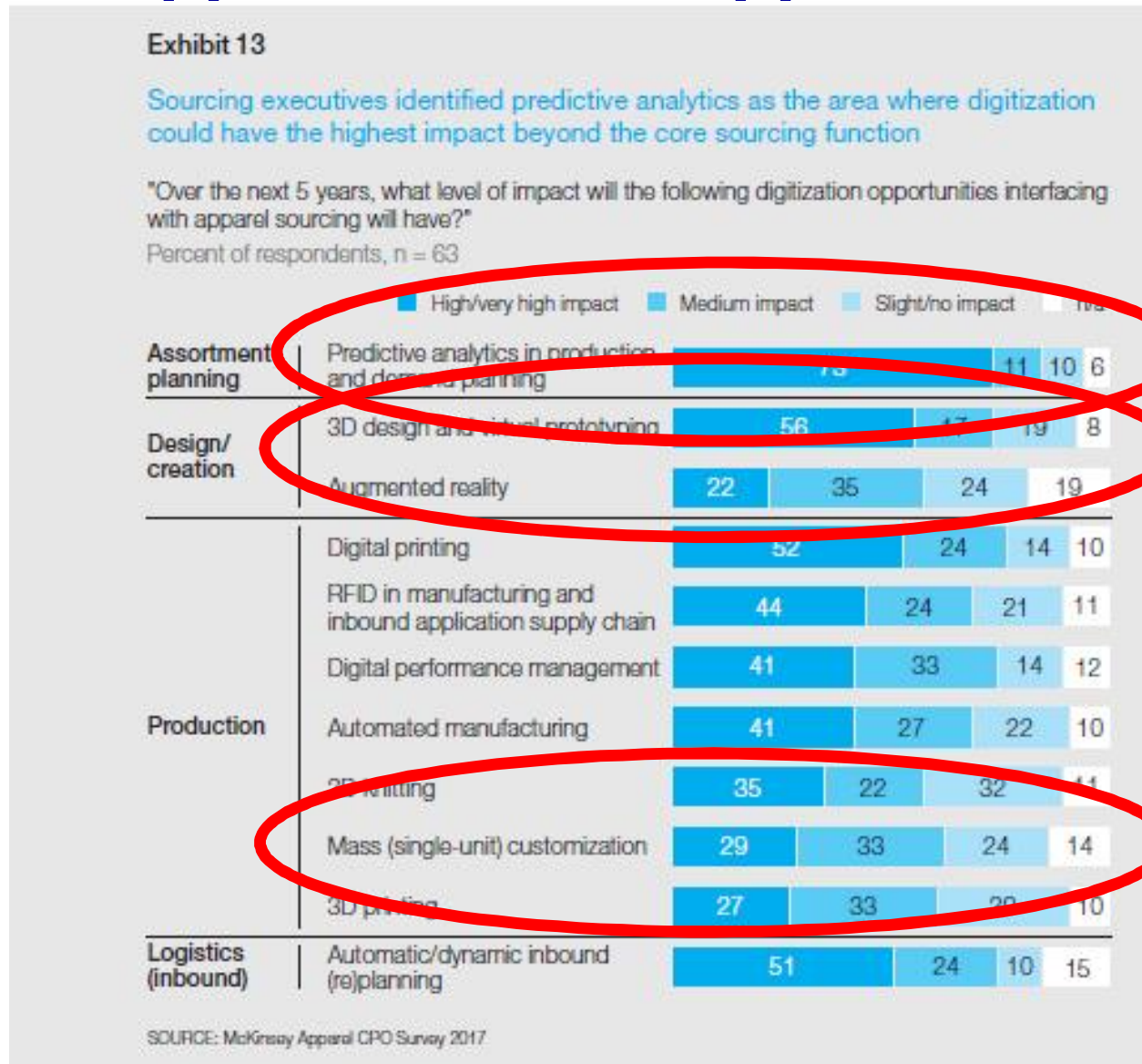
Questionnaire findigns shortly

- Utilisation of digitalisation is on goining especially on digital media.

- Biggest challenges are related to resources (as well as economical and personel) and lack of know-how.

- Utlisation of Digitalisation will be seen especially on adaptation of different level of customisation.

Digitization Opportunities in apparel sourcing

Exhibit 13

Sourcing executives identified predictive analytics as the area where digitization could have the highest impact beyond the core sourcing function

"Over the next 5 years, what level of impact will the following digitization opportunities interfacing with apparel sourcing will have?"

Percent of respondents, n = 63

High/very high impact   Medium impact   Slight/no impact

Category	Opportunity	High/very high	Medium	Slight/no	n/a
Assortment planning	Predictive analytics in production and demand planning	73	11	10	6
Design/ creation	3D design and virtual prototyping	56	17	19	8
	Augmented reality	22	35	24	19
Production	Digital printing	52	24	14	10
	RFID in manufacturing and inbound application supply chain	44	24	21	11
	Digital performance management	41	33	14	12
	Automated manufacturing	41	27	22	10
	3D knitting	35	22	32	11
	Mass (single-unit) customization	29	33	24	14
	3D printing	27	33	30	10
Logistics (inbound)	Automatic/dynamic inbound (re)planning	51	24	10	15

SOURCE: McKinsey Apparel CPO Survey 2017

Big Data

Big Data is defined by the 3 Vs.

- Volume
- Velocity
- Variety

Expansion to 6Vs
- Veracity
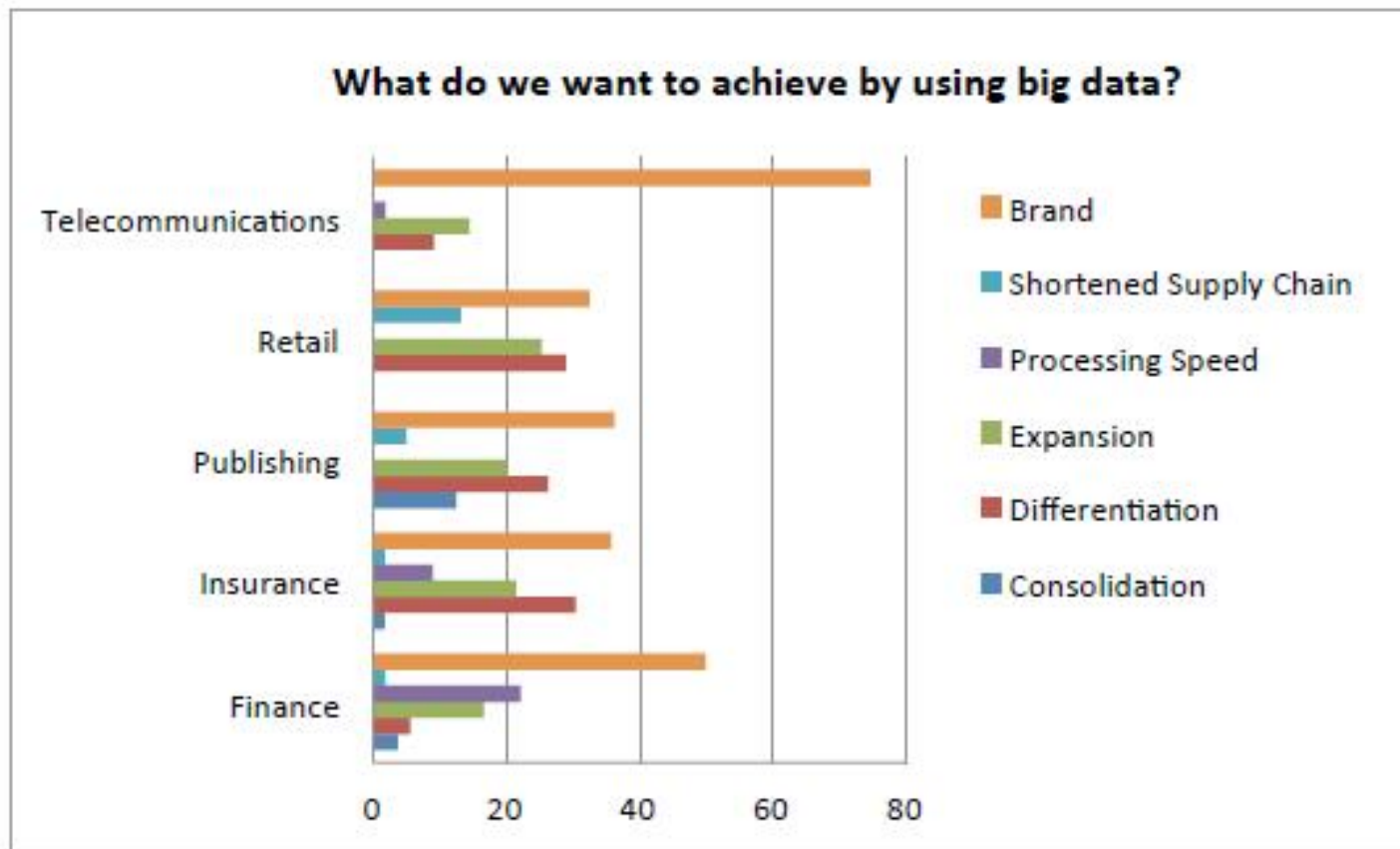- Validity
- Volatility

(Big) Data enables

- New and Better Products
  - Customer understanding
- Branding
- Prediction of trends and sales
- Historical analysis gives a company the ability to learn
- Optimise production, marketing and inventory
- Aggregate Information - not relying only the internal numbers !
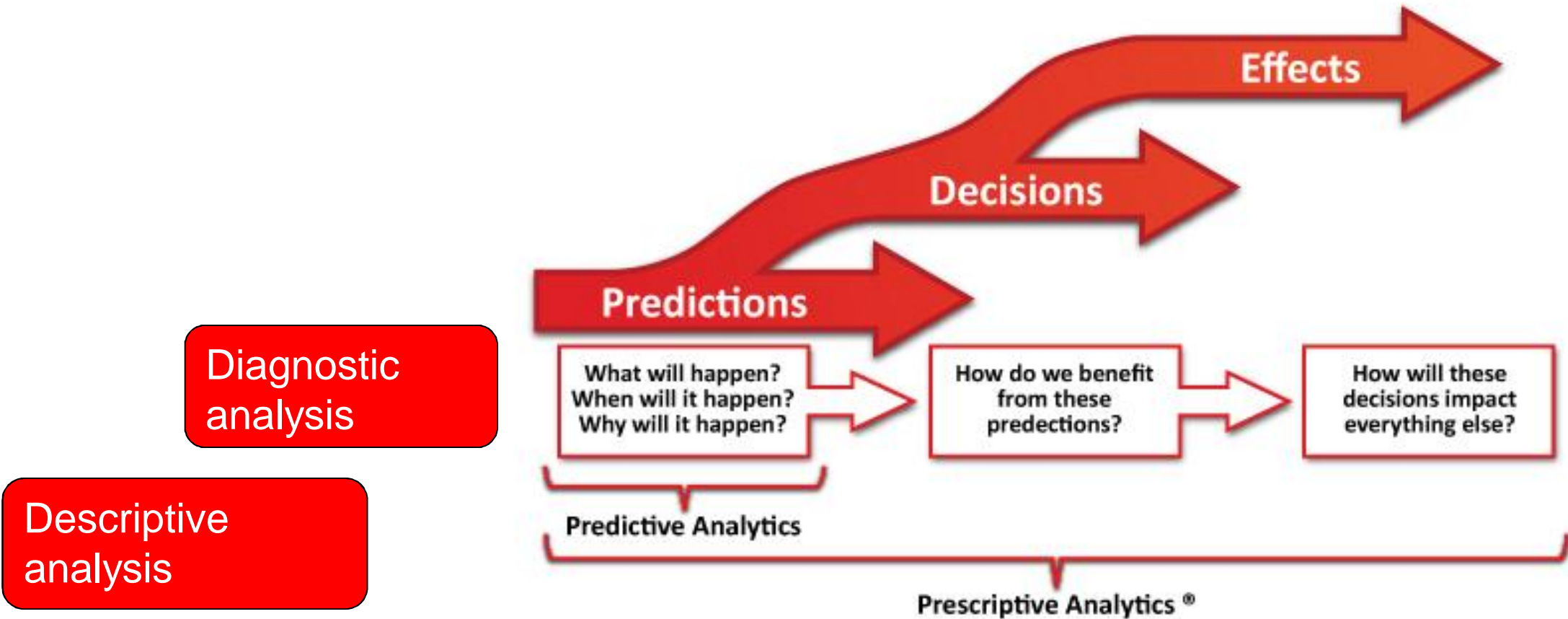
Data and Analytics - Data Driven Business Models

What do we want to achieve by using big data?

Legend:
- Brand
- Shortened Supply Chain
- Processing Speed
- Expansion
- Differentiation
- Consolidation

Sectors: Telecommunications, Retail, Publishing, Insurance, Finance

Figure 2 Demonstrating what each analyzed sector wanted to achieve by utilizing big data

'Data and Analytics - Data–Driven Business Models: A Blueprint for Innovation' by Josh Brownlow, Mohamed Zaki, Andy Neely and Florian Urmetzer.
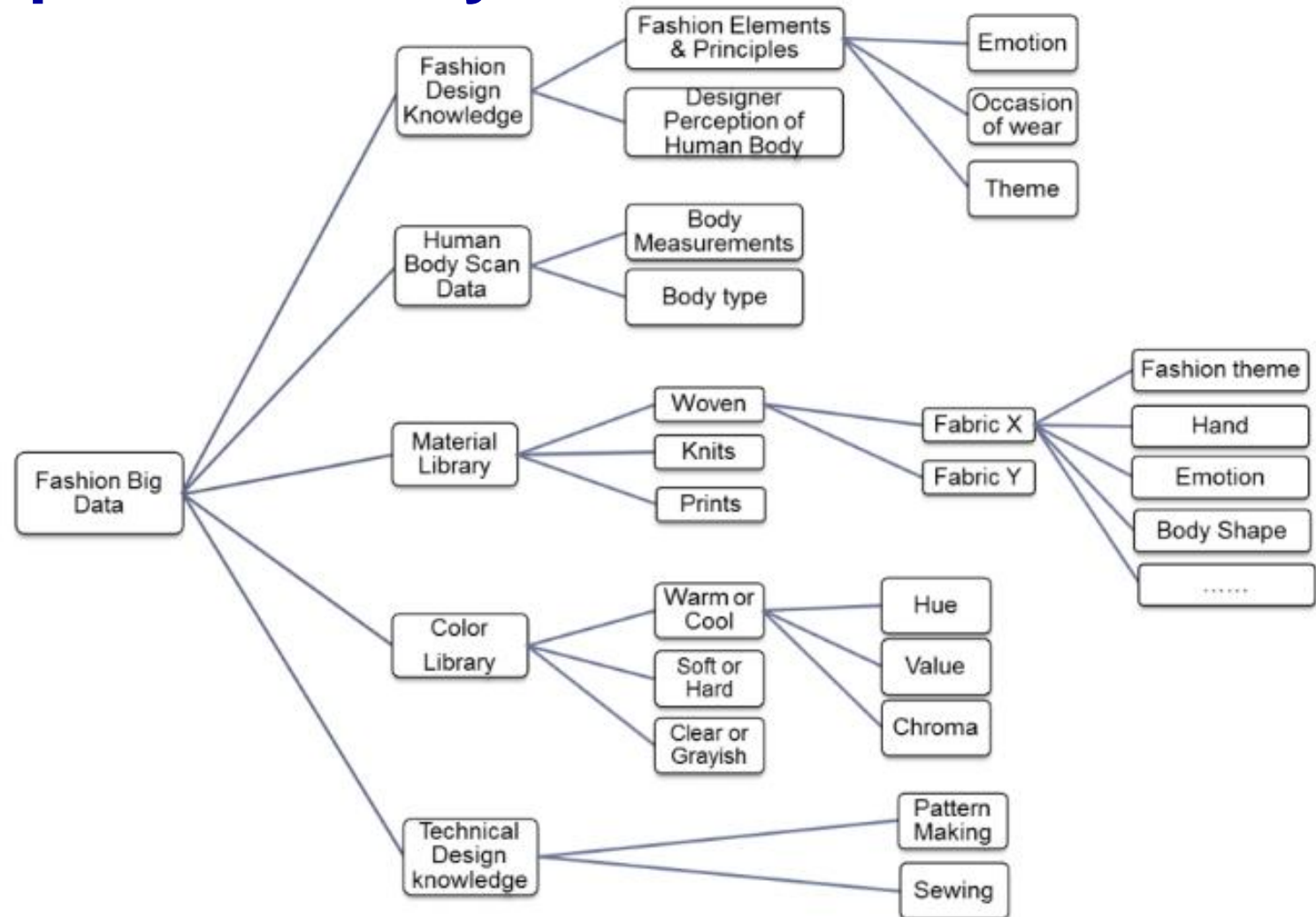
https://cambridgeservicealliance.eng.cam.ac.uk/resources/Downloads/Monthly%20Papers/2015FebruaryPaperTheD DBMInnovationBlueprint.pdf

Foresight with the Big Data

Diagnostic analysis

Descriptive analysis

Predictions

Decisions

Effects

What will happen?
When will it happen?
Why will it happen?

How do we benefit from these predections?

How will these decisions impact everything else?

Predictive Analytics

Prescriptive Analytics ®

Big Data in Apparel industry

Sales and inventory

Logistics

Manufacturing / production IoT

Social media (images, text and videos)

Physiological data

Figure 2. Data in Fashion

[1] Big data in fashion industry, S Jain, J Bruniaux, X Zeng[1,2] and P Bruniaux
http://iopscience.iop.org/article/10.1088/1757-899X/254/15/152005

Big Data analysis for Fashion

Focus on price optimisation
Incompetitor, Inoptimiser
And Hook.

Intelligence Node

EDITED

Right product.
Right price.
Right time.

Trend and colour
forecasts
2+ years ahead.

WGSN
CREATE TOMORROW

Mass customisation and new services

Mass customisation

- Customisation and mass production = Mass customisation
  - "to deliver goods and services that meet individual customers´ needs with near mass production efficiency" (Tseng & Piller, 2003)

- Less production, less waste
- Personalised products
- Meet new customer's needs

Mass customisation in apparel industry

Apparel Mass Customization Model

Point of Customer Involvement	Apparel Mass Customization Options	Enabling Technologies
patterns	custom fit or design	body scanner, digitizer and CAD
design	component choice: size, style, fabric	CAD and web-based product configurators
production planning	Data forecast	EDI & production planning software
assembly	Small-lot repeats	electronically controlled eqpt robotics, & UPS
distribution	Point-of-sale data	EDI &supply chain management software
post purchase	Customer adjustments	electronic settings for smart clothing, gel gloves that mold to hands

	Mass Production	**Mass Customization**
Goal	Delivering goods and services at prices low enough that nearly everyone can afford them	Delivering affordable goods and services with enough variety and customization that nearly everyone finds exactly what they want
Economics	Economies of scale	Economies of scope and customer integration
Focus	Efficiency through stability and control	Variety and customization through flexibility and responsiveness
Product	Standardized products built to inventory	Standardized modules assembled based on customer needs
Key Features	▪Stable demand ▪Large homogeneous markets ▪Low-cost, consistent quality, standardized goods and services ▪Long product development cycles ▪Long product life cycles	▪Fragmented demand ▪Heterogeneous niches ▪Low-cost, high-quality, customized goods and services ▪Short product development cycles ▪Short product life cycles
Organization	Mechanistic and hierarchical	Organic and flexible
Customer Involvement	Customers are passively involved in the value chain.	Customers are actively integrated into the value chain.

Mass customisation examples

Made-to-order, Deloitte Research 2015

Price isn't the barrier

1 in 5 consumers who expressed an interest in personalised products or services are **willing to pay a 20% premium.**

Where would you even start?

42% of consumers who are interested in customised products or services would still rather be **led by brands** and choose from a selection of options.
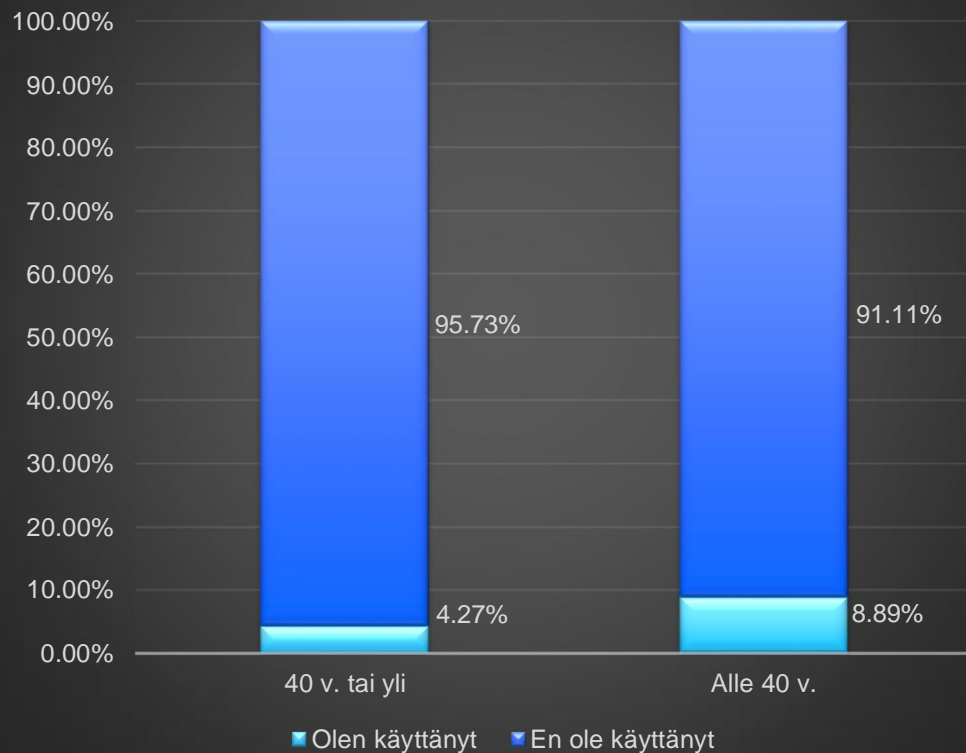
Deloitte.

The Deloitte Consumer Review
Made-to-order: The rise of mass personalisation

Palveluiden käyttö eri ikäryhmissä
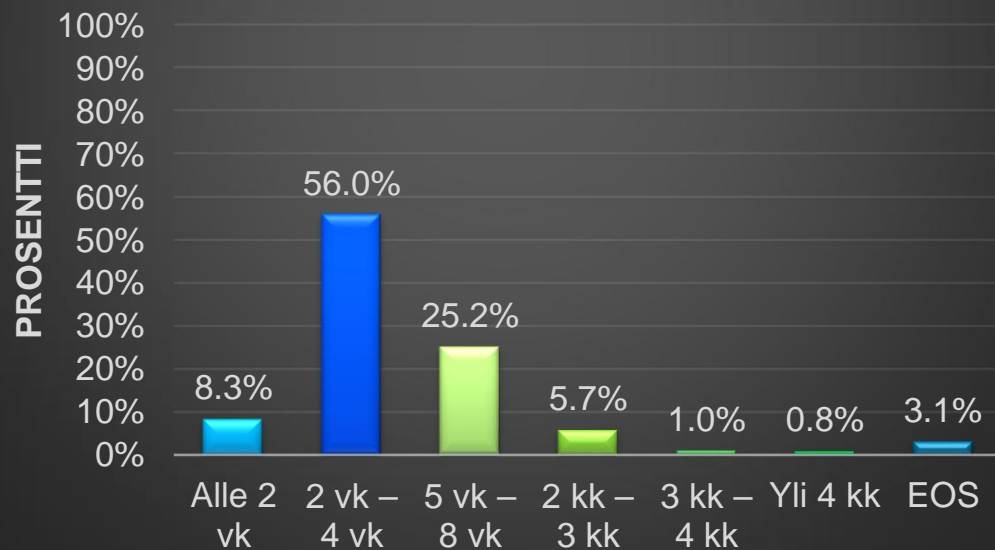

Oletko käyttänyt digitaalisia kustomointipalveluja?

	40 v. tai yli	Alle 40 v.
Olen käyttänyt	4.27%	8.89%
En ole käyttänyt	95.73%	91.11%

Olisin kiinnostunut käyttämään digitaalista kustomointipalvelua kodintekstiilien muokkaamiseen.

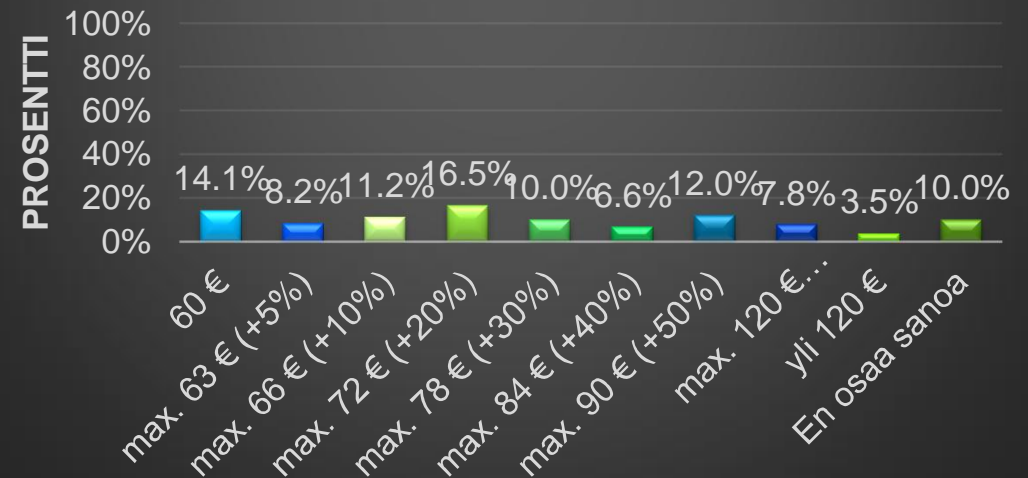|	40 v. tai yli	Alle 40 v.
1. täysin eri mieltä	3.99%	2.47%
2. jokseenkin eri mieltä	7.99%	4.98%
3. ei samaa eikä eri mieltä	16.01%	8.75%
4. jokseenkin samaa mieltä	42.57%	47.76%
5. täysin samaa mieltä	18.85%	31.37%
En osaa sanoa	10.58%	4.66%

Kodintekstiilien kustomointipalvelut –kysely

Kuinka kauan olisit valmis odottamaan juuri sinun toiveidesi ja tarpeidesi mukaan valmistettua tuotetta? (N=9584)

PROSENTTI

| Alle 2 vk	2 vk – 4 vk	5 vk – 8 vk	2 kk – 3 kk	3 kk – 4 kk	Yli 4 kk	EOS
8.3%	56.0%	25.2%	5.7%	1.0%	0.8%	3.1%

Kotimainen verho maksaa keskimäärin 60 euroa. Olisin valmis maksamaan juuri minun kotiini sopiviksi muokatuista minun mieltymysteni mukaisista verhoista……

PROSENTTI

60 €	max. 63 € (+5%)	max. 66 € (+10%)	max. 72 € (+20%)	max. 78 € (+30%)	max. 84 € (+40%)	max. 90 € (+50%)	max. 120 €…	yli 120 €	En osaa sanoa
14.1%	8.2%	11.2%	16.5%	10.0%	6.6%	12.0%	7.8%	3.5%	10.0%

Future work in DICI -project

- What we do in DICI -project next year
  - Data analysis
  - Technologies for customisation services
  - Potential of new interfaces: Hololense
  - Concepts for intelligent workwear

- Seminar " Digiloikka vaatetus- ja tekstiilialalla. " together with STJM
  - 18.1.2017 klo 12:00 – 17:00, Espoo, VTT
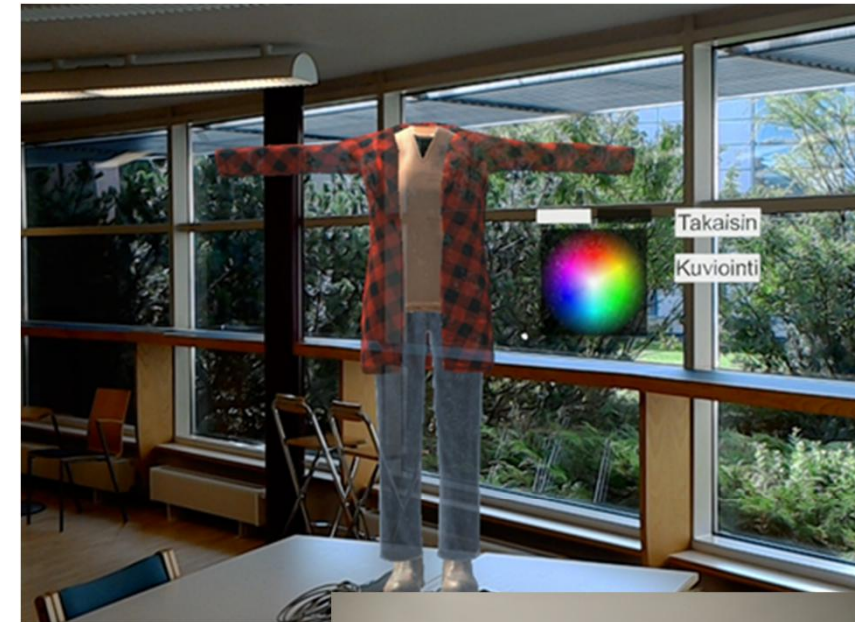
Thank you.

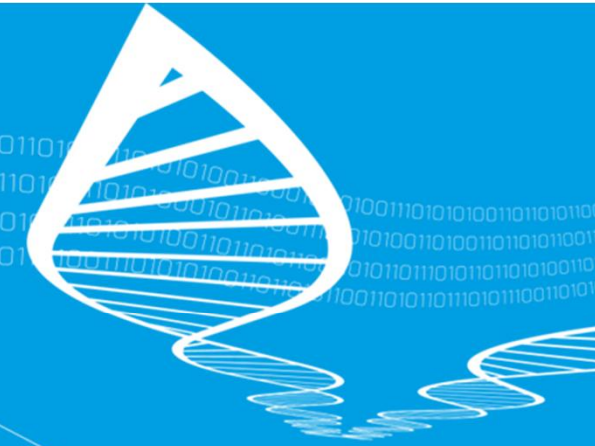Contact:

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