



European Builders Confederation

Digital construction: A pivotal role for SMEs

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The voice of construction SMEs and craftsmen in Europe



- Established in 1990
- Exclusively representing construction SMEs and craftsmen
- Main fields: social affairs, standardisation, energy efficiency, internal market



- Partner and member of SMEUnited
- Chairing the UEAPME Construction Forum



- Partner and Member of SBS
- EBC Coordinating all construction activities in standardisation

Importance of construction SMEs



9%
of the GDP of the
European Union



3 MILLION
enterprises in the
sector



18 MILLION
workers in the
sector

YOUNG PEOPLE & WOMEN IN CONSTRUCTION

90% MALE

10% FEMALE

**8% YOUNGER
THAN 25**

Importance of construction SMEs

EUROPEAN CONSTRUCTION ENTERPRISES*



94,1%
Microenterprises
less than 10 employees



5,3%
Small enterprises
from 10 to 49 employees



0,5%
Medium enterprises
from 50 to 249 employees



0,1%
Large enterprises
more than 250 employees

* by size – Source: Eurostat 2015

Digitalisation targets cannot be reached without construction SMEs!

EBC dossiers

- **SME policy:** Small Business Act, Special VAT schemes for small enterprises, SME definition
- **Digitalisation:** Building Information Modelling (BIM), Construction 4.0
- **Social Affairs:** Posting of Workers, Coordination of Social Security Systems, Health and Safety, Skills, Social Dialogue 3D printing; preassembled modules
- **Energy and Environment:** Energy efficiency, Renewable energies, Eco-design, Energy Labelling, Circular Economy, Sustainable Buildings New materials: nanomaterials; robotisation
- **Economy:** Internal Market, Public Procurement, Late Payments, Fiscal Policy (Reduced VAT rates), Financing & Funds
- **Standardisation:** Small Business Standards, Construction Products Regulation (CPR)

Construction 4.0

- **The Internet of Things (IoT)**
- **Building Information Modelling (BIM)**
- **Off-site construction tools:** 3D printing; preassembled modules
- **New materials:** nanomaterials; robotisation
- **Artificial intelligence:** Virtual Reality (VR), Augmented Reality (AR), gamification

Construction 4.0

- New and **modernized image of the construction sector**, which may be pivotal to change the negative image of the industry
- Improvement of **cost-efficiency** and ensuring the global **sustainability of the sector**
- Alleviate **heavy construction tasks** and possibility to **upskill and attract construction workers**
- Major improvements to **project management and maintenance** during the whole lifecycle of a building
- **Facilitate higher energy efficiency** and lower life-cycle costs of buildings
- Enhanced **communication and trust** along the value chain

A warning on digitalisation

However, digitalisation is an enabler and not a goal in itself!

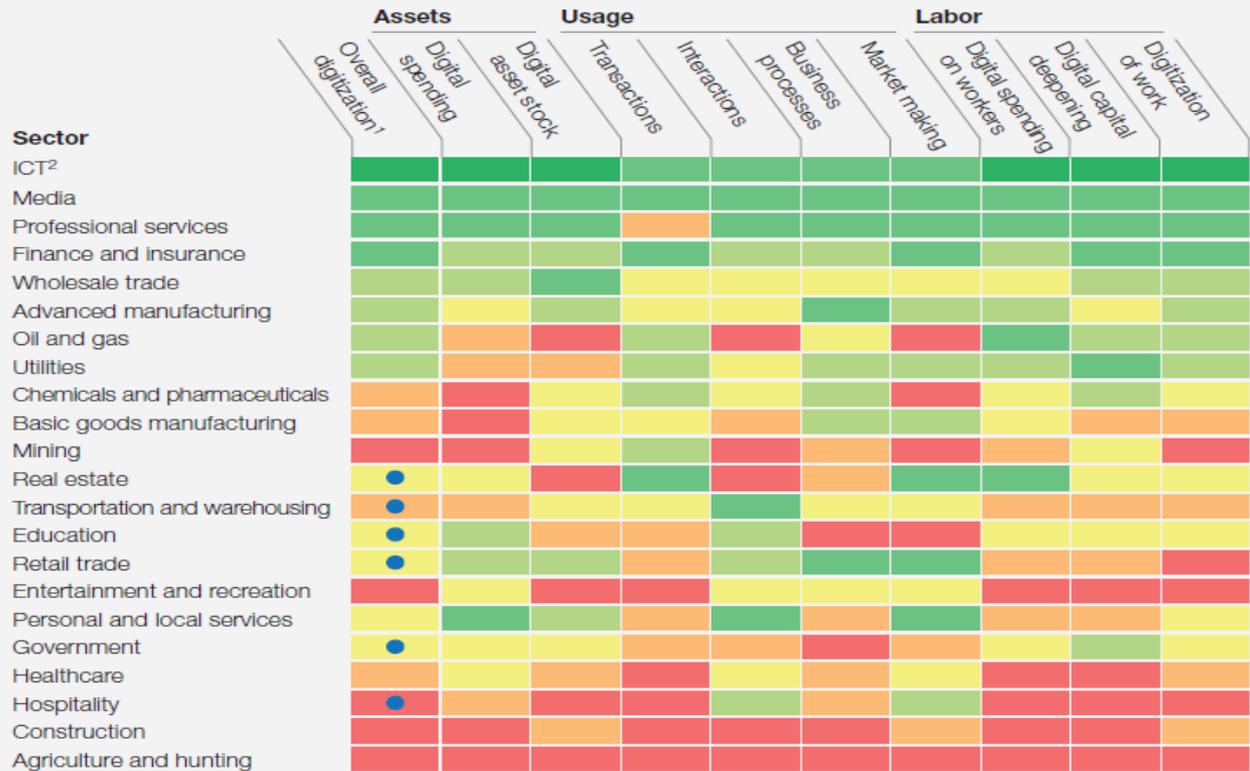
Digital solutions make sense when they are affordable, easy to access and constitute a real added value to our construction SMEs and craftsmen

Where do we stand on digitalisation?

The construction industry is among the least digitized.

McKinsey Global Institute industry digitization index; 2015 or latest available data

Relatively low digitization Relatively high digitization
 ● Digital leaders within relatively undigitized sectors



¹Based on a set of metrics to assess digitization of assets (8 metrics), usage (11 metrics), and labor (8 metrics).
²Information and communications technology.
 Source: AppBrain; Bluewolf; Computer Economics; eMarketer; Gartner; IDC Research; LiveChat; US Bureau of Economic Analysis; US Bureau of Labor Statistics; US Census Bureau; McKinsey Global Institute analysis

Where do we stand on digitalisation?

From McGraw Hill Construction Smart Market Report. *The Business Value of BIM in Europe* (2010) – Survey results:

- **A little over one third of the industry in Western Europe (36%)** has adopted BIM.
- **Architects are the primary adopters** (47%) with engineers (38%) and contractors (24%) lagging behind.
- 45% of BIM users in Western Europe consider themselves experts or advanced.
- **Contractors have the lowest level of BIM adoption and proficiency**, with only 23% saying that they are using BIM and only one quarter (24%) indicating that they consider themselves expert or advanced.
- **Contractor adoption is also the most recent** —68% having begun using BIM in the past 3 years.

Digitalisation challenges

- **Limited size of SMEs**
 - Cost of digitalisation
 - Lack of digital expertise
 - Lack of financial means and upfront investments
- Very **rapid evolution and complex development**
- Compatibility of digital tools: e.g. **CE marking**
- SME representation in the **standardisation process**
- Perception of **robotisation** as a replacement of skills and professionals
- Changes to the **share of responsibilities**: liability; protection of data; reluctance from insurance providers
- Risk of **monopoly and dependence** of large players

While the whole sector feels heavily these changes, construction SMEs feel these challenges on an even bigger scale!

How to overcome these digitalisation challenges?

- **Need for massive digitalisation: how a smartphone works?**
- **Cooperation of the whole construction chain:** win-win situation for all!
- Proper **involvement of SME representatives** in all relevant fora, especially in **standardization**
- Ensuring a **progressive roadmap and adapted transition (e.g. public procurement)** phase from traditional methods to digital ones for SMEs
- Guarantee digital tools **financially bearable** for SMEs
- Financial support for upskilling blue-collars and **training SMEs** to face digital challenges
- Facilitation of the exchange of **good practices** and the **creation of networks** at the European, national and local level

A leading role for the SMEs

SMEs empowerment

- **Projects targeting SMEs**
 - BIM4REN, BIM-SPEED, CONDAP, etc.
- **Mapping and anticipating digital skills needs**
 - Blueprint for skills in construction
- **Representing SMEs in standardisation**
 - CEN TC 442 on BIM
- **Research on Construction 4.0 for SMEs**
 - DigiPLACE
- **Political actions**
 - Infographics, events (EU Industry days)
 - Cooperation with the construction value chain:

A leading role for the SMEs

SMEs empowerment

- **Projects targeting SMEs**

BIM4REN (Horizon 2020)

- Develop easy, collaborative and affordable BIM tools for energy renovation projects
- Three pilot sites: San Sebastian, Venice and Paris

BIM-SPEED (Horizon 2020)

- Create a cloud-based BIM platform that is open, affordable and user-friendly to reduce the time of deep renovation projects
- 12 real buildings as demo cases

A leading role for the SMEs

Mapping and anticipating digital skills needs

Blueprint for skills in construction (Erasmus+)

- Major Sector Skills Alliance between construction employers and trade unions with Vocational Education and Training (VET) providers to address skills gaps and anticipate skills' needs in the construction sector
- Focus on on digitalisation, energy efficiency and circular economy

Research on Construction 4.0 for SMEs

DigiPLACE (Horizon 2020)

- Unprecedented collaboration between EU construction industry representatives, a strong academic partnership and the support of 3 National Ministries (Italy, France and Germany)
- Ambitious attempt to enable the creation of a digital platform that could integrate the different technologies, applications and services currently existing in digital construction

The Manifesto for Digital Construction

- **Cooperation of the whole construction chain:**
win-win situation for all!
- Digitalisation of the construction sector must be a **top political priority for the European Union:**
 - Appropriate regulatory framework to ensure a **level playing field for SMEs**
(antitrust, data quality and privacy, etc.)
 - Appropriate financial framework in **the new MFF to support SMEs access to finance**
in the fields of R&D, skills and IT infrastructure



SMARTER **CONSTRUCTION**,
STRONGER **ECONOMY**,
INCLUSIVE **SOCIETY**:

**THE EUROPEAN CONSTRUCTION
INDUSTRY MANIFESTO
FOR DIGITALISATION**



European Builders Confederation

Thank you for your attention!

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