











We worked with WEF and E&C industry leaders on the Future of Construction initiative





































































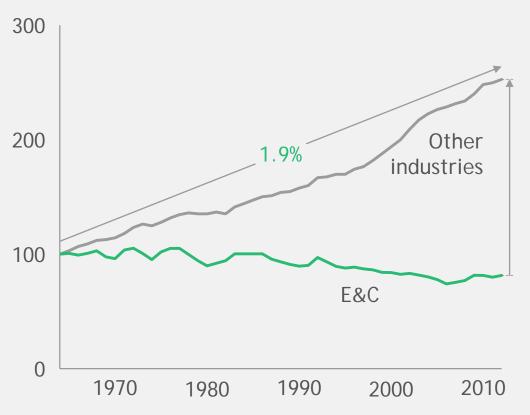




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Construction was lagging behind other industries

Index of US labor productivity





E&C industry is not even in the third Industrial Revolution, let alone in the fourth; a step change is required. Thanks to new technologies a new industrial revolution is feasible.

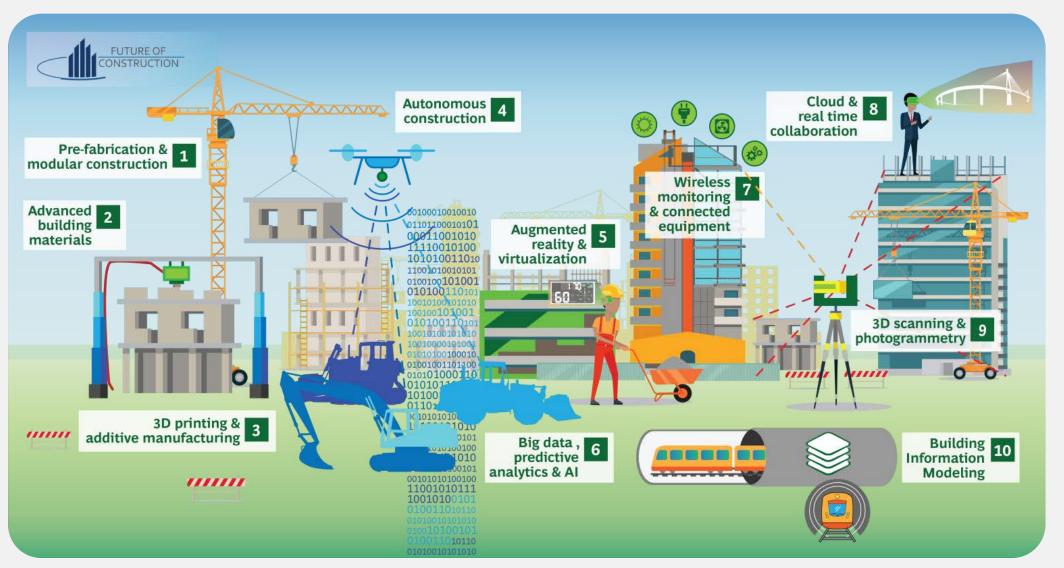
Future of Construction session, Davos

Megatrends create imperative for change in E&C

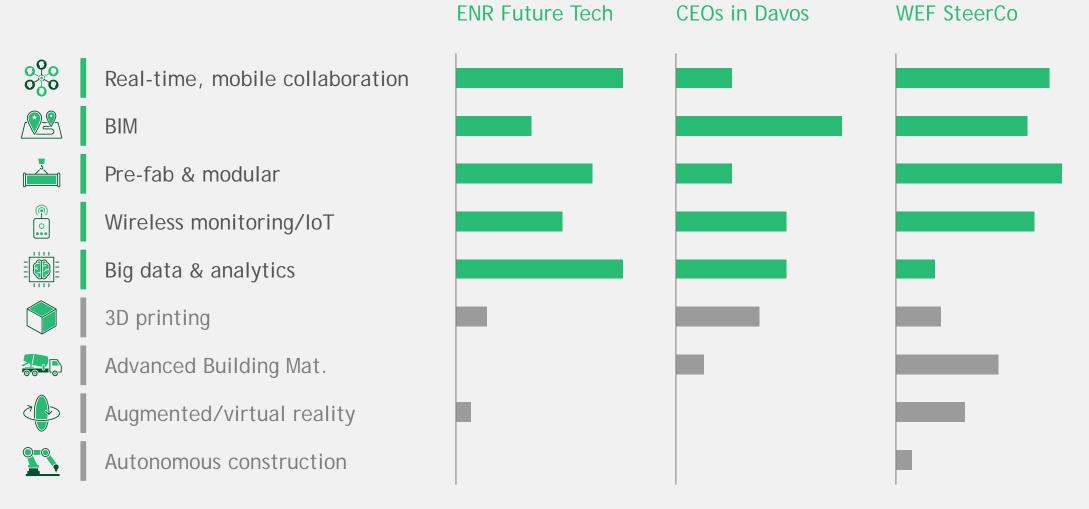


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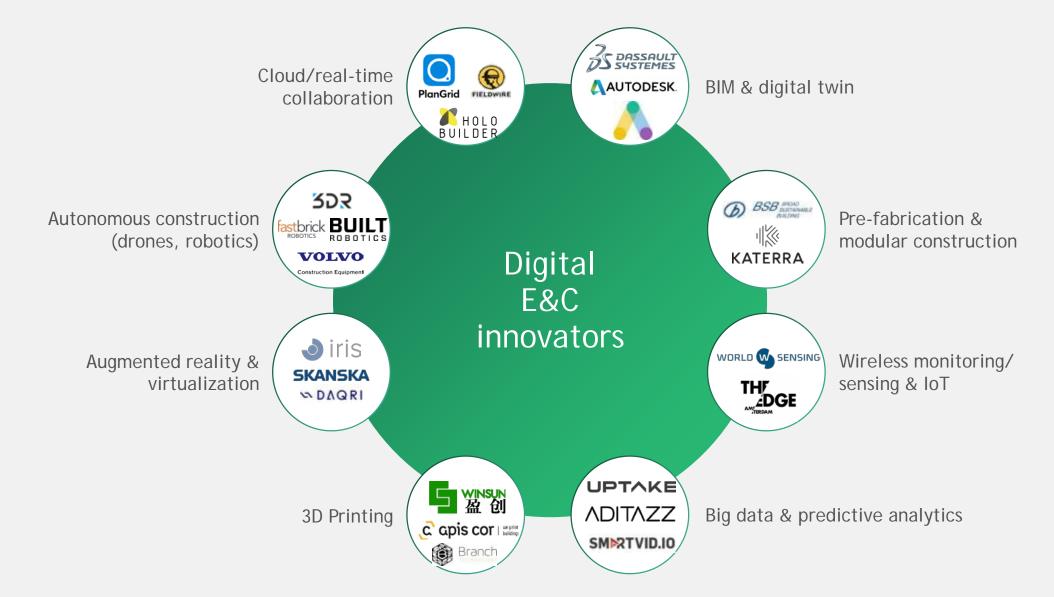
E&C has started to adopt digital technologies



Five technologies considered most impactful

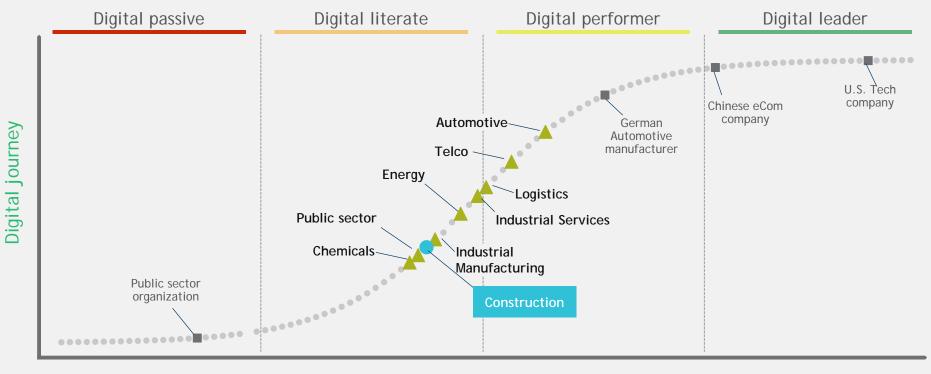


Ecosystem of E&C innovators is emerging



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E&C made progress in digital, but still room to catch up



- Often unclear vision
- Isolated initiatives
- Organization not yet enabling digitization

- Clear vision/strategy
- Roadmap defined
- Governance in place enabling digitization

- Key digital capabilities
- Digitalized processes
- Strong digital mindset and agile culture

- Digital visionaries
- Pure digital business
- Most revenue from dig. business models

Digital maturity

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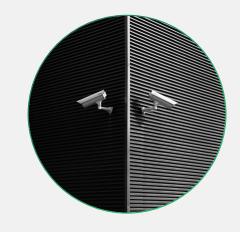
Next-gen of digital technologies: Artificial Intelligence



Data@scale becoming available

"Infer like a human"





Machine vision has come a long way

"Understand like a human"





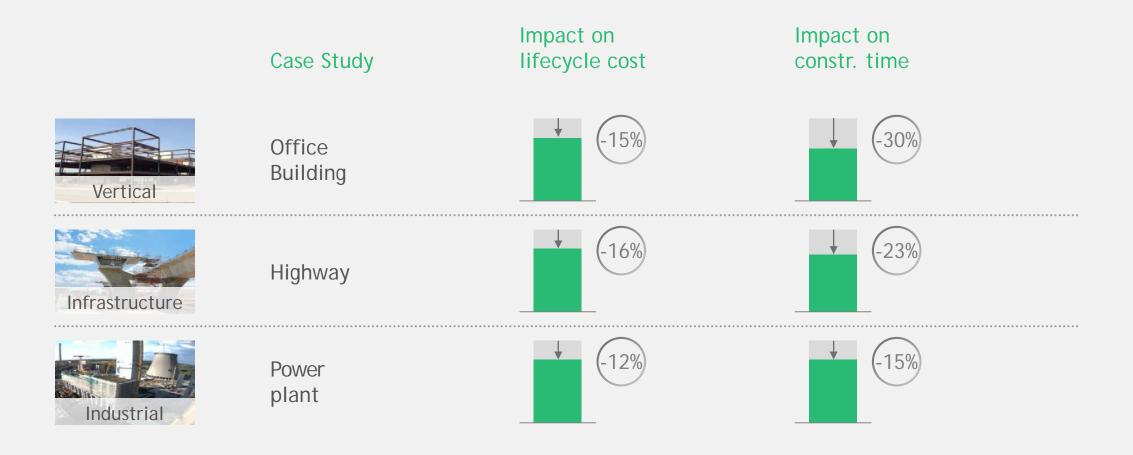
Robotics has greatly improved

"Act like a human"



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High long-term cost & time upside from digitalization



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All stakeholders have to act for the digital transformation



- Plan strategically, e.g. sector plan
- Regulate smartly (e.g., building codes, permits, ...)
- Incubate innovation & fund flagship projects
- Develop education & training programs
- Contribute as key project owner



- Develop pipeline and innovation/productivity roadmap
- Create foundation and incentives for digital, data & innovation
- Pilot & scale technology
- Refine skills & culture
- Review LPM setup & processes
- Adjust procurement, specs & collaboration



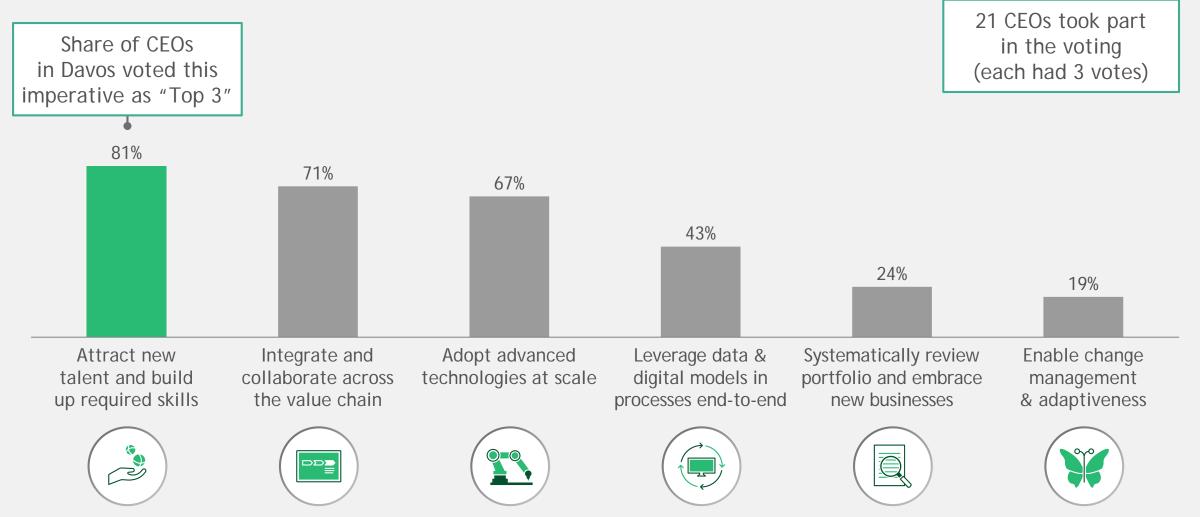
E&C companies

- Adjust business model & strategy
- Prioritize, pilot & scale key tech & use cases starting at pain points
- Build up innovation teams & foster innovation culture
- Develop data platforms
- Collaborate with the eco-system



- Prepare for new sales approach (e.g., object libraries) incl. wholelife value
- Develop new offers (e.g., prefab, integrated sensors)
- Agree on standards for interoperability

For E&C CEOs talent is key to enable this transformation



It's a vicious circle: We need digital talent to adopt new technologies, but to attract them we need new technology

Addressing the talent gap requires coordinated actions



... of contractors face difficulties in recruiting



.. of construction workforce are women



17%

... of young people could imagine a career in construction

Solving the E&C talent gap

Company



Establish strategic workforce planning

Foster employee development opportunities and continuous learning

Leverage new technologies to increase job quality and productivity

Revamp workplace culture and promote diversity

Industry



Run industry image campaigns

Promote new HR policies & common industry practices and standards

Target and attract new talent pools

Organize joint engagement with education providers

Government



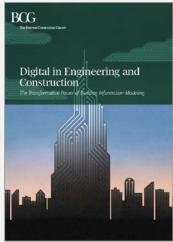
Promote and sponsor innovation initiatives

Reduce complexity by standardization and public-private collaboration

Enhance support for jobs and job-matching services

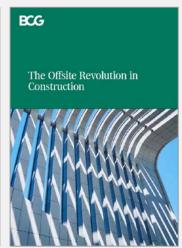
Update and innovate apprenticeship and academic programs

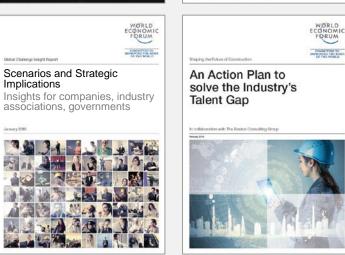
Read our reports to learn more



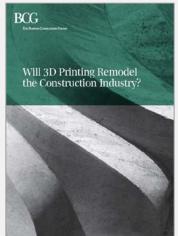


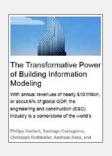








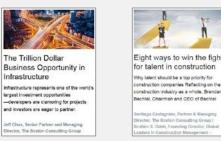




The Trillion Dollar

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Infrastructure









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