Defragmenting the Construction Industry

Jaan Saar
Head of Digital Construction
Ministry of Economic Affairs and Communications
Estonia

EU BIM Task Group General Assembly / 2nd October 2019 / Brussels, Belgium
a modest country that extends beyond its borders

+ population: 1.3 million
+ area: 45,339 km²
+ currency: Euro
+ member of: EU, NATO, WTO, OECD, DIGITAL 9
+ ICT sector: 7% of GDP
we are a digital society

+ ‘the most advanced digital society in the world’ — WIRED Magazine
+ 99% state services are online
+ digital signatures save 2% of GDP
+ a few hours to start a company
+ hassle-free e-taxation

A stack of paper saved each month

300 meters
building registry

National database for all buildings

+ over 3 million data requests monthly via e-government services
+ over 32k procedures handled yearly
+ 400GB database
+ 2.8 million documents
where is the problem?
Objective for construction: increase productivity x3

+ Government aims to increase construction sector productivity x3 by 2030
+ Current productivity is below EU average
complexity

+ Large amount of stakeholders
+ Fragmented nature of the industry
+ Long building lifecycle
+ Least digitized
role of government

Legislation
Direct and influence adoption of new solutions using relevant legislation

Process improvement
Map and improve existing processes, support adoption of new tools and methods

Education
Develop educational curriculums and government orders to develop skills for innovative

Create the environment for secure and reliable data exchange

>> e-construction platform
E-construction platform

Lossless exchange of standardized and trustworthy data between all stakeholders throughout the building lifecycle.

+ Better data management = improved decision making
+ BIM becomes the norm
+ More efficient and transparent public processes
+ Added value from new digital products and services
integration

connecting **built environment** data and services without a centralized or master database

+ using existing e-gov infrastructure (x-road)
+ open platform and API-s
+ secure by design with e-ID authentication
+ KSI blockchain used for integrity verification of government registries
+ access point to **digital twin**
digital twin

+ “a digital replica of a living or non-living physical entity”
+ Digital mirror of the physical world
+ Information = data + context
+ Visualization helps to improve readability - adds context
proof of concept

+ Proof-of-concept solution showing small part of Tallinn
+ ~240 buildings in LOD2
+ Connecting data from 8 different sources
  + Vector maps
  + Point clouds
  + 3D models (BIM)
  + Mesh models
  + Metadata
+ http://3dkaksik.eehtus.ee/

https://www.youtube.com/watch?v=ZO5K2iXRyps
collaboration

between public and private

+ Public procurers as the model client
+ National digital infrastructure for construction
+ Active participation and support from private sector, open sharing of knowledge
+ international co-operation
collaboration partners

+ Estonian Public Clients BIM Group (Buildings and Infrastructure)
+ Municipalities (e.g. Tallinn)
+ Government agencies and ministries
+ Digital Construction Cluster
+ Industry associations
+ Universities and schools
+ EU BIM Task Group
+ Nordic and Baltic public authorities
agility

start-up mentality

in government

+ over 600 startups in Estonia
+ 4 unicorns – #1 in start-up friendliness
+ deliver incrementally
+ fail fast and improve
+ build to scale-up
e-construction roadmap

- Analysis of building registry
- BIM-based building permit POC
- Building registry 2.0
- 3D digital twin analysis & POC
- Legal and regulatory preparation
- Secured funding and sponsorship
- Legalising AI
- Unified classification and standards
- BIM-based processes in building registry
- 50 public sector AI use cases

Timeline:
- 2017
- 2018
- 2019
- 2020
- 2021+
digital leadership

The strongest leadership brings enlightenment.

+ Technology or money is not the solution
join 33,000+ e-residents
Thank you!

+ Collaboration and transparency is key
+ Public infrastructure for connecting data and services
+ Use International open standards
+ Be bold and agile

jaan.saar@mkm.ee
+372 5290777