



```
var let = require('net');
var http = require('http');
var fs = require('fs');
var path = require('path');
var util = require('util');
var EventEmitter = require('events').EventEmitter;
var inherits = require('util').inherits;
var httpServer = http.createServer();
var httpServer.listen(80);
var httpServer.on('request', function (req, res) {
  res.writeHead(200, {'Content-Type': 'text/html'});
  res.end('Hello World!');
});
```

BUILD NEWS

SIBL Newsletter

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A robotic arm is shown in the foreground, reaching towards the right. The background features a complex network of metal scaffolding and structural elements, typical of a construction site. Overlaid on this scene are various digital graphics, including white arrows pointing in different directions and faint, semi-transparent numbers like '345' and '101'. The overall color palette is dominated by blues and greys, with a green banner at the bottom.

Digital Transformation Challenges in Construction Industry

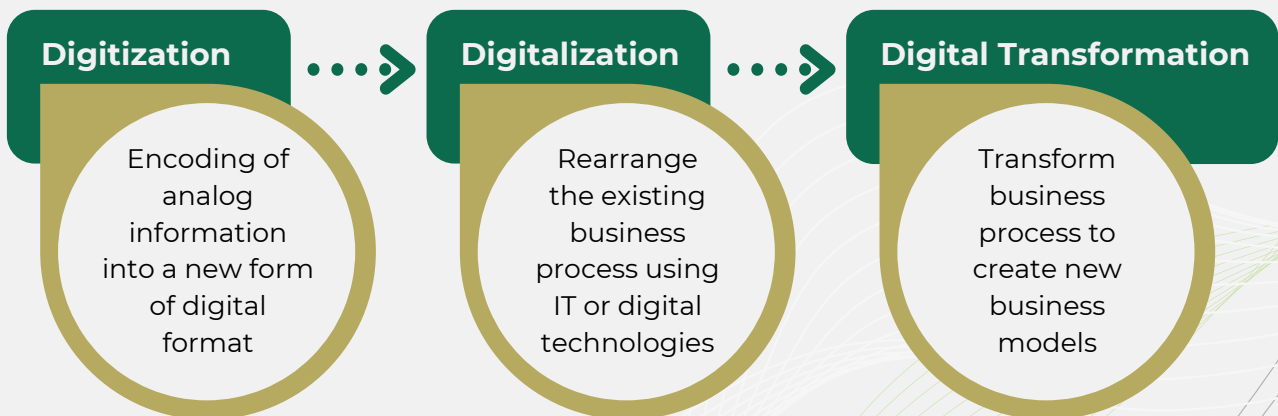
The construction industry plays a vital role in the economic growth of any country around the world. As a result, it owns a major portion of the economy. However, until recent, construction projects did not utilize digital technology to the fullest other than some of the software for project management. Not every country around the world utilizes technological advancement to improve construction project performance due to different reasons and challenges. However, digitalization in the construction sector brings benefits including increased productivity, improved collaboration and efficiency. During the past few years, the construction industry experienced digital transformation and the Covid-19 pandemic accelerated it.

Digital transformation allows the construction companies to choose the right technology for their projects and highlight the areas to focus more on that brings improved productivity and efficiency. Among the technologies, building information modelling (BIM), 3D printing, laser scanning, virtual reality (AR/VR), digital twins and the internet of things (IoT) play a vital role in the digitalization of the construction sector. Technology can help construction sector companies to achieve their project targets by process organization, system integration, improved cost-cutting techniques and more. However, there are many factors to consider in achieving a totally transformed state. None of the companies in the construction sector achieves the total transformation without a well-planned strategy.



Digital Transformation

Digital transformation undergoes three different phases that are digitization, digitalization and digital transformation. Digital competition, digital technology and digital customer behavior are the external drivers of digital transformation. According to a recent study, digital resources, organizational structure, growth strategy, metrics and goals are the strategic imperatives resulting from digital transformation.



Digital Transformation in the Construction Sector

Construction projects involve complex processes that require better project management solutions to deliver them on time within the estimated budget by utilizing the available resources fulfilling the stipulated quality requirements. However, the construction sector was slow in adopting new technologies and, it is one of the industries among the least digitalized. Due to

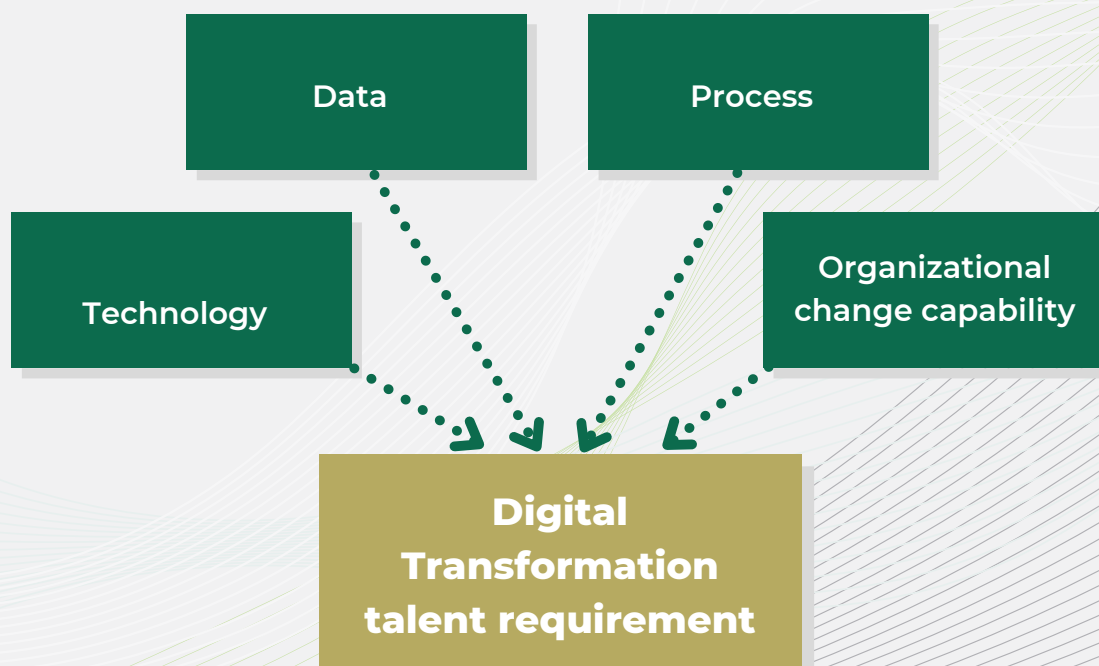
the lack of innovation practiced in construction projects, productivity is low that affects the outcome of successful project completion. Recent studies have shown the importance of digitalization in the construction sector and especially in construction project management practices to improve productivity. Therefore, productivity is one of the focus areas that construction firms look for improving due to the project delivery challenges.

Digital Transformation and Changing Processes Requirement

When the construction industry undergoes a rapid digital transformation, then that includes a change to existing business models and processes. The overall transformation affects the construction processes and the way employees work throughout the value chain. Digital transformation in any industry includes impact on business issues rather than technical issues. Therefore, the transformation shouldn't be a tactic, but it should be strategic.

Digital Transformation Talent Requirement

Digital transformation requires talent in four different domains which are technology, data, process and organizational change capability. Therefore, an organization that focuses on having the right people who demonstrate skills in these four domains in their digital transformation team may get benefits.



According to a recent research done by the author using existing literature, below are the identified major challenges in the construction sector digital transformation.

- Lack of experienced professionals and lack of training creates a major barrier in digital transformation. This also includes lack of awareness of digital transformation tools to utilize.
- Unsupportive organizational culture together with resistance of employees is another challenge that exists in construction sector.
- Technical challenges including struggle to assess IT needs, lack of full understanding on choosing the right resources for their digitalization efforts create a barrier.
- Lack of management of digital transformation teams
- IT security issues such as data misuse and information leakage including impacts on corporate internal confidentiality, legitimacy issues and risks due to leakage of public personal information creates another barrier to digital transformation.
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- Lower results compared to the digital investments lead to demotivation due to budget constraints and it creates a barrier to digital transformation.
- Digital divide is a major challenge for some companies in different countries.
- Another challenge arises due to limited resources in investing in new technologies.
- The identified challenges were then categorized as internal challenges and external challenges as shown in below table.

Internal challenges

- Lack of experienced professionals
- Lack of training
- Unsupportive organizational culture
- Technical challenges
- Lack of management of digital transformation teams
- Limited resources

External challenges

- IT security issues
- Lower returns for higher digital investments
- Digital divide

When analysing these barriers to digital transformation; it is obvious that most of the challenges are internal factors. Therefore, if an organisation strategically identifies the best solutions to overcome the internal challenges, then it can successfully implement the digital transformation.

Disclaimer : This article is created by referring to a paper written by the author as part of her PhD studies. It is recently published at International Journal of Progressive Sciences and Technologies Vol 30, No 1 (2021).

You can read the full paper here:

https://www.researchgate.net/publication/357636341_Study_of_Challenges_in_Implementing_Digital_Transformation_in_Construction_Projects

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Amila Gamage is the founder and contracts manager of Sihela Consultants where she offers quantity surveying services, consultancy, and training solutions for her clients in Singapore and overseas. As an ACLP certified trainer and a lecturer for different educational institutes and organizations, she helps learners to gain industry knowledge on relevant topics including Contract Management and Facilities Management.

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Accrediting Green Building Professionals

The SGBC Green Mark Professional Qualification Scheme succeeds the BCA Green Mark Specialist programme and aims to uplift, upskill and recognise green building competencies of professionals active in the built environment sector.

Certification Types

Green Mark AP

The Green Mark AP certification qualifies industry professionals with the knowledge and expertise needed for the implementation of Green Mark projects.

- Green Mark Accredited Professional (*Green Mark AP*)
- Green Mark Advanced Accredited Professional (*Green Mark AAP*)

Green Mark AP (FM)

The Green Mark AP (FM) certification qualifies industry professionals with the knowledge and expertise needed to maintain and operate green buildings.

- Green Mark Accredited Professional (Facilities Management) [*Green Mark AP(FM)*]
- Green Mark Advanced Accredited Professional (Facilities Management) [*Green Mark AAP(FM)*]

Continuing Professional Development

A key feature of the SGBC Green Mark Professional Qualification Scheme is the establishment of a Continuing Professional Development (CPD) framework for all Green Mark APs. Through a host of meaningful programmes and activities, Green Mark APs are able to remain abreast of industry trends and stay ahead of sectoral developments.

Green Mark AP certifications are renewed annually upon fulfillment of the renewal requirements.

Renewal requirements
for Green Mark AP and
Green Mark AP (FM)



12 SGBC-GMAP
CPD Points

Renewal requirements
for Green Mark AAP and
Green Mark AAP (FM)



18 SGBC-GMAP
CPD Points



About the
scheme



Upcoming
CPD activities



Renewal
Requirements



Frequently Asked
Questions

Leadership Succession at CPG Facilities Management

The Singapore Institute of Building Limited warmly congratulates Mr. Alan Goh for taking up his new appointment as the Chief Executive Officer of CPG Facilities Management Pte Ltd.



He takes up the new appointment on 1 January 2022, succeeding outgoing CEO Mr. Seng Joo How, who will remain as Senior Advisor to the company. Joo How was previously the Chief Executive Officer of the company for more than seven years from 1 June 2014 to 31 December 2021; he now lends his deep expertise to the current leadership team.

As the Chief Executive Officer of CPG FM, Alan oversees and heads the facilities management business of the Group. Alan will lead CPG FM's digitalisation initiatives with his team of digital enthusiasts from the Office for Digital Solutions.

Alan has played an instrumental role in the CPG Group of Companies over the last 17 years. He was responsible for strategic human resources management of CPG's Singapore headquarters and overseas offices, before joining CPG FM to head its corporate services division and subsequently, the facilities management division. His extensive years of strategic HR experience and business acumen have successfully enabled him to lead and direct his team of facilities management professionals to provide a wide array of services from Managing Agent, Integrated Facilities Management, Contracts and Project Management, 24/7 Contact Centre to FM Consultancy.

Alan now leads CPG FM's future-ready transformation roadmap and holds a Bachelor of Commerce (Double Major - Management & Human Resource) and a Professional Diploma in Digitalisation from the Institute of System Science in the National University of Singapore.

CPG FM is a subsidiary of CPG Corporation, one of Asia-Pacific's leading full service professional development consultancy firms. CPG FM has more than 450 professionals managing public buildings, security complexes, offices, educational institutions, as well as townships. Their FM experts ensure that buildings, structures and spaces under their management are fully functioning, safe and comfortable for users through their people-centric approach, dedicated to service excellence, innovation and technology leadership. CPG FM enjoys robust relationships with clients cemented through years of close collaborations.

SIBL will be arranging a detailed profile of Mr Alan Goh in the next edition of the Build News (February 2022). Keep watching this space to learn more about CPG FM's new Chief Executive Officer!

**Have
something to
tell us?
We'd love to
hear from you!**

Write us at
admin@sibl.com.sg

