



To make every engineering project succeed

Introduction of Glodon & Digital Construction Building

Stock Code: 002410

James Liu



**Director and
Senior Vice President**

1998-1999 Chongqing Branch GM
2000-2006 Cost BU GM
2007-2008 HR GM & Infrastructure Management GM
2009-2014 VP of Glodon Group
2015 SVP of Glodon Group
2017 Director of Glodon Group
2013 Vice Chairman of Construction Market & Tendering Research Center at China Civil Engineering Society
2015 Secretary-General at Green Development Alliance of ZPark Smart Building Association
2016 Membership of Research and Development International
2017 Expert in Big Data Industry Ecological Alliance of China

Helen Liu



Vice President

1999-2000 Technical Engineer
2000-2001 Sales Engineer
2002 Hebei Branch GM
2003 Beijing Branch BD Manager
2004 HQ Promotion Division GM
2005 HQ Sales&Service Management Division GM
2006 Beijing Branch GM
2007 Regional GM (North District, China)
2008-2009 Domestic Marketing GM (Sales & Marketing & Service Division)
2010-2013 VP of Glodon Group & Domestic Marketing GM
2014-Now VP of Glodon Group & MD of International Business Unit



A platform service provider for digital buildings

We are committed to using technology to
make every project a success

Our Mission

Pursue the spirit happiness and material happiness for our staff, and
to create a better working and living environment for human beings



Our Vision

Become an outstanding enterprise with happy staffs,
industry leaders, evergreen businesses and good reputation



Core Values

[Customer-oriented
Hard-working
Entrepreneurship
Win-win]



1998 **2005** **2008** **2010** **2011** **2013** **2014** **2015** **2016** **2018**

Glodon was founded and registered in Haidian District as a high-tech enterprise.	Glodon was awarded the title of "Key Software Enterprise under State Planning".	Glodon established a research center in the U.S. and became the first Chinese high-tech enterprise in the University of Maryland - China Research Park.	<ul style="list-style-type: none">Glodon listed on the Shenzhen SME board successfully .Glodon completed strategic restructuring with Beijing MorrowSoft Technology Company	<ul style="list-style-type: none">Glodon completed strategic restructuring with Shanghai Shinedeliver Software Company.Glodon established a wholly-owned subsidiary in Singapore.	Glodon established a subsidiary in Hong Kong and extended its market to Taiwan, Malaysia, Indonesia, Thailand and many other Southeast Asian countries.	<ul style="list-style-type: none">Glodon announced its acquisition of Progman Oy, a world-class MEP design and construction software company based in Finland.Glodon announced its acquisition of Hangzhou Qingzhou Software Co., Ltd.	Glodon announced a comprehensive transformation to an Internet plus platform service provider in the construction engineering area.	Glodon was renamed "Glodon Company Limited" formally and started to use a new Logo.	Glodon formally published the <i>Digital Construction White Paper</i> , to interpret the concept of "digital construction" systematically , introduce a new concept and develop a path to the transformation and upgrading of construction industry.
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Business



Cost

Pricing and quantity calculation: more than 20 core products, over 180,000 enterprise users and over 1 million direct users. Users cover more than 98% special Grade I construction enterprises

Engineering information service: covering 30 provinces, municipalities directly under the Central Government and autonomous regions, 460 secondary prefectural-level cities and 938 tertiary cities, districts and counties nationwide and possessing nearly 10 years of industrial data

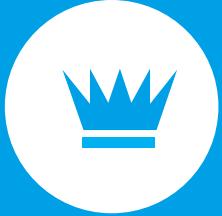
E-government: applying to nearly 20 provinces, 3 municipalities directly under the Central Government, more than 60 prefectural-level cities and over 100 cooperation projects



Construction

Engineering construction series systems (software + hardware) Integrating three solutions including smart construction site, BIM construction and digital enterprise, providing customers with more than 20 core products, and serving over 1 million direct users

BIM5D Product: in 2017, the operating income exceeded 100 billion, more than 1000 corporate customers were attracted, over 130 application benchmarks were achieved, and the application rate reached 66%

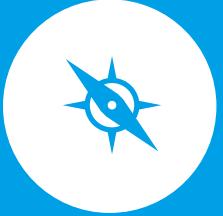


Innovation

Integration of planning, construction and management: offering services to such projects as Beijing's Urban Sub-center, Future Science City and Huairou Science City; having close contact with Xiong'an New Area, Fuzhou Coast New Town and Digital China Conference;

Construction unit integration: providing constructors with integrated solutions for their projects' entire lifecycle by means of BIM.

Interior decoration integration: satisfying end consumers' demands for personalized customization and achieving mass customized interior decoration for industrial projects by using BIM technologies.



Eco

New finance: including 6 financial companies engaging in factoring, finance lease, petty loan and financial service, etc. The accumulative loan offered by the end of 2017 exceeded RMB 800 million

Engineering education: cooperating with more than 1,400 specialized Institutions of construction and involving nearly 20,000 teachers of construction specialty and over 200,000 students

Strategic investment and M&A: completing several acquisitions; investing in several companies such as Lakala; taking part in setting up more than 10 funds as a LP and making strategic investment

Talent System

- ◆ Glodon possesses more than 5,200 employees, forming a team familiar with construction, proficient in IT, good at management and capable of assuming responsibilities.

Strategies for talent development:

- ◆ **Specialization:** The employees with higher education background account for 90%, including nearly 200 technical experts specializing in cloud computation and big data as well as more than 200 elites from such industries as graphics and BIM;
- ◆ **Professionalism :** Drawn by job qualifications, career paths for employees are built;
- ◆ **Globalization:** Relying on technical exchanges with such well-known colleges and universities as [Stanford University](#), [Carnegie Mellon University](#) and [University of Maryland](#), Glodon improves professionals' competence continuously.

10+
years of industrial experience

Management
Team

>66%

Talents of construction account for 31%
Talents of computer account for 35%

Talent
Structure

Sustained Growth

R&D team members total 2,000,
with the YoY growth of 18.45%

R&D Team

Younger Employees

Employees under 30 years old account
for 70%

Executive
Team



Professionalized Development

- As a high-tech enterprise recognized by the state, Glodon pays high attention to independent research and development as well as technical system building. Persisting in R&D investment in such key technical sectors as BIM, graphics modeling, cloud computation, big data, IoT and AI, Glodon has invested RMB 659 million in R&D in 2017. The total R&D investment in the past three years added up to about 2 billion and remained a high year-on-year growth.
- Since the main products of Glodon have proprietary intellectual property rights and self-innovative software architecture, the Company masters 623 software copyrights, more than 40 patents and over 30 core technologies.
- With world-leading 3D graphics algorithm and advanced component technologies, Glodon achieved rapid development and sustainable upgrading of products.

BIM Technologies

Domestic and foreign talents were attracted, while BIM solutions targeting the entire lifecycle of projects were established and applied to several large projects successfully.

3D Graphics Technologies

The graphics technical platform with proprietary intellectual property rights was developed independently and covered such key technical sectors as model data management, geometric modeling algorithm and graphics display rendering, while the WEB big model display reached the domestic leading and international advanced level.

Cloud Computation

Three-layer technical system covering IAAS, PAAS and SAAS was established, including hybrid cloud infrastructure, ITIL operation, maintenance and management system, basic cloud services, BIMFACE open platform, and offered effective support to the transformation of the company's products towards "cloud + terminal".

7 R&D Institutions

Tsinghua University – Glodon BIM Joint Research Center, Shanghai Jiao Tong University BIM Research Center, Shanghai R&D Center, Beijing R&D Center, Xi'an R&D Center, Silicon Valley R&D Center, Finland R&D Center

Layout of Research Institutes & Engineering Academies

Mobile technologies, IoT, big data, BI, AI... ...

Globalized Layout

- Since 2008, Glodon has established its international presence and served customers from more than 100 countries all over the world;
- With its **subsidiaries in the USA, Finland, UK and Sweden** as cores, Glodon radiates its business out to the European and American markets;
- Driven by the regional advantages of its **subsidiaries in Singapore, Hong Kong and Malaysia**, Glodon develops the SEA market (including Taiwan, Indonesia and Thailand) and Indian market;
- At present, **Cubicost** series technical products (TAS, TRB, TBQ, TME and E-tender) and **MagiCAD** series design products have took their places in the front ranks of the world for their BIM technologies, favored and recognized by global users.



SEA Agent:



The only official mall:
<http://shop.glodon.com>

Partial Partners

(Note: partial list, in no particular order)

- Tsinghua University
- Peking University
- Tongji University
- Tianjin University
- Carnegie Mellon University
- Stanford University
- University of Maryland
- National University of Singapore
- China Real Estate Chamber of Commerce
- China Association of Construction Enterprise Management
- China Construction Industry Association
- China Civil Engineering Society
- Construction Market and Tendering & Bidding Research Branch
- China Engineering Cost Association
- China Tendering & Bidding Association
- China Construction Metal Structure Association
- China Engineering & Consulting Association
- China Building Decoration Association
- Big Data Industry Alliance of China
- China Software Industry Association
- Dalian Wanda Group Co., Ltd.
- China Vanke Co., Ltd.
- Evergrande Real Estate Group Limited
- Greenland Holdings Corp., Ltd.
- Country Garden Holdings Company Limited
- Beijing Urban Construction Group Co., Ltd.
- Hunan Construction Engineering Group
- China State Construction Engineering Corporation
- China Railway Group Limited
- Shanghai Construction Group
- Beijing Uni.-Construction Group Co., Ltd.
- China Architecture Design & Research Group
- Shanghai Municipal Engineering Design Institute
- Beijing Institute of Architectural Design
- China Petrochemical Consulting Company
- Autodesk Limited
- Schneider Electrically-Controlled Equipment Limited
- Royal Institution of Chartered Surveyor
- Building and Construction Authority, Singapore
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Cases



★ Xiong'an New Area



★ Beijing's Urban Sub-center in Tongzhou District



Beijing Subway



CTF Finance Centre



Shanghai World Expo Exhibition & Convention Center



Beijing Capital International Airport



★ New Beijing Capital International Airport



CCTV



Tianjin Goldin Finance 117



Shenzhenwan International Commercial Center of China Resources



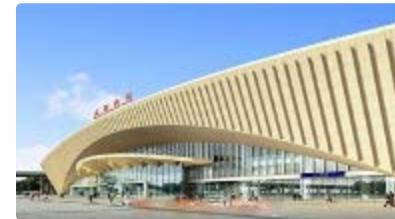
Yueyang Dongting Lake Bridge



Hainan Middle Route Expressway



Sanmen Nuclear Power Station



Kunming Railway Station



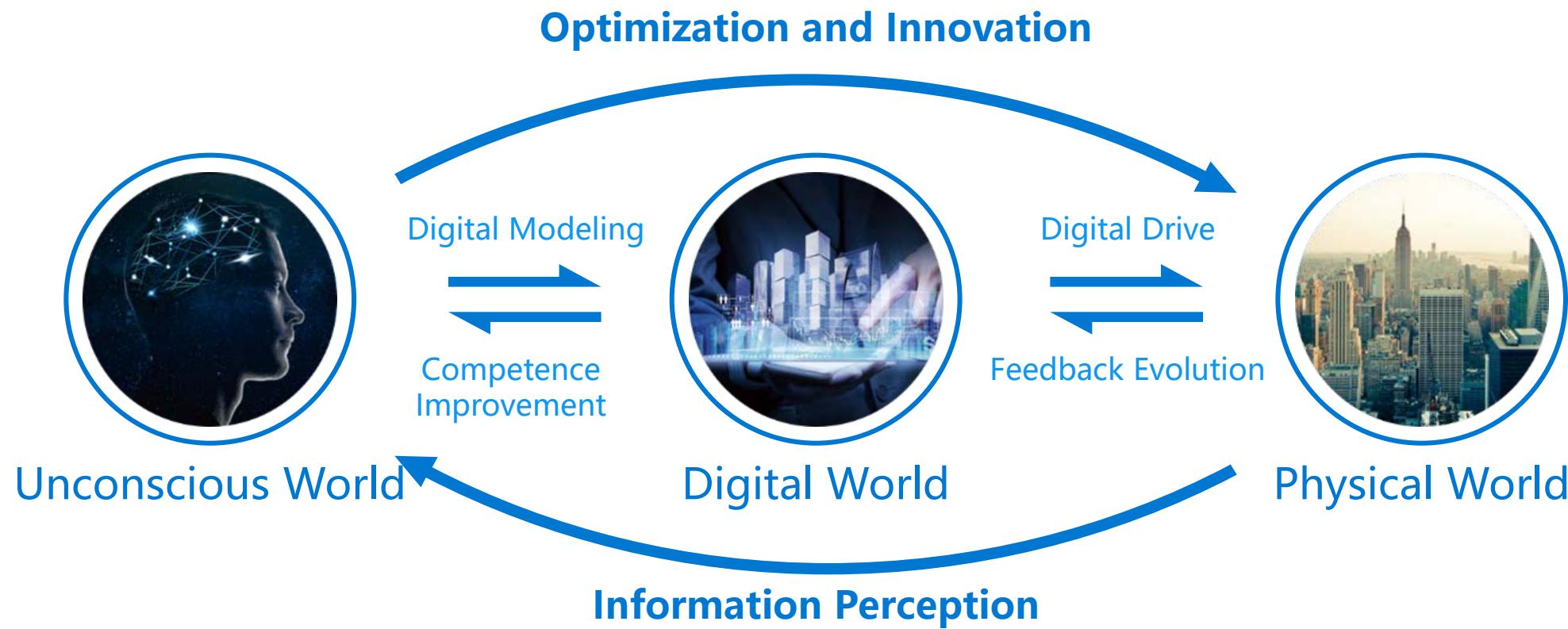
Gezhouba Water Control Project

Dreams of the First Undertaking

We have achieved our dream when we start an undertaking
enabling estimators to throw away calculators

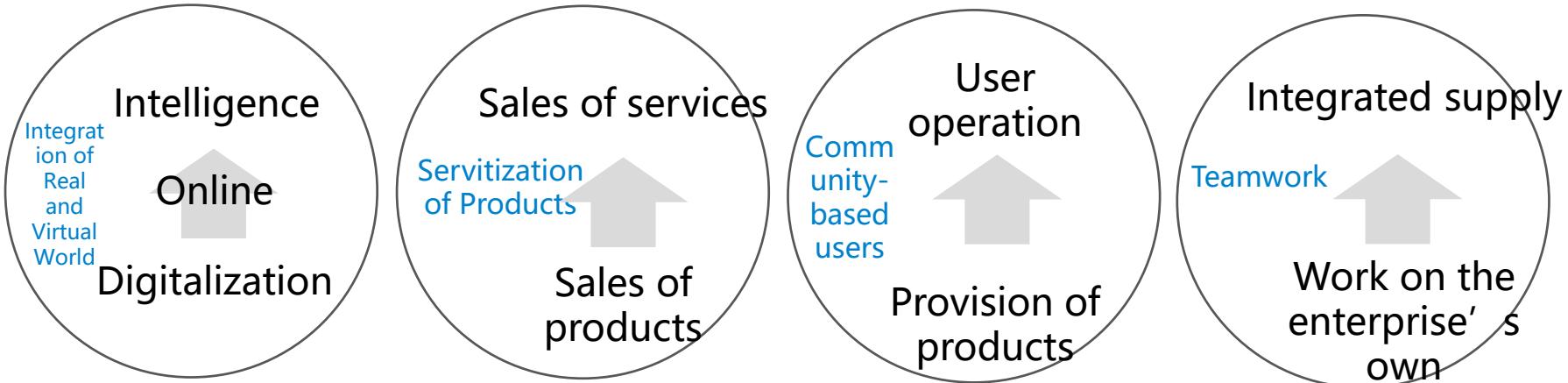
We have also become
the No. 1 construction cost software in China

The Digital Age -- Symbiotic Development of "Three Worlds"



Mutual promotion, common evolution and symbiotic development of "**three worlds**" improve people's ability to learn and change the world dramatically, lower the cost significantly and **further promote people's efficiency and progress of transforming the physical world.**

The business logic of the digital age has changed



Big data, cloud computation, mobile technologies, networking, AI, social intercourse, IoT and BIM

Every enterprise faces
T
choice

- To develop into an industrial platform by horizontal integration of a value chain
- To create an irreplaceable professional competence by longitudinal development towards a segment

The construction industry calls for transformation and upgrading

Drawn by consumption upgrade

- People spend 92% of their time living and working in construction area.
- With social development and advancement of science and technology, people's consumption structure, consumption quality and consumption logic are upgrading, so are their demand for construction.
- Construction not only satisfies the basic demand for use, but pursues the quality of living and using. It changes from a standard house to a customized and personalized one.
- The demand for move-in conditions is increasing.

Boosted by environmental requirements

- The energy consumption of construction accounts for 50% of the total energy consumption in the world.
- The pollution arising out of construction activities accounts for about 40% of the total pollution in China, and the carbon discharged by the construction industry account for 50% of the total in China.
- The energy consumption of construction operation accounts for 47% of the social energy consumption in China, and more than 95% of the existing buildings are buildings with high consumption of energy.
- According to the *Government Work Report* released on March 5, 2016, the water consumption, energy consumption and CO₂ discharge of each unit in gross domestic product should be lowered by 23%, 15% and 18% respectively in the next five years.

Driven by technical reform

- The mature consumption Internet and thriving industrial Internet create a favorable environment for industrial development.
- The development and maturation of BIM + cloud, big data, IoT, mobile technologies and intelligence are driven by technical development.
- Digital technologies are permeating and affecting the industry and social life at every level and a new industrial ecosystem is developing.

Forced by industrial development

- The total profit rate of the construction industry is 1%-3% only, which is far lower than that of the other industries.
- The investment in research and development is woefully inadequate, which is less than 1%.
- Only 9.8% of the migrant workers of the new generation are engaged in construction, representing one third of the migrant workers of the last generation.
- On February 21, 2017, the State Council has printed and released *Opinions about Promoting Sustainable and Healthy Development of the Construction Industry*.



It is the general trend for the construction industry to transform and upgrade.

Inspiration from the digital reform of the manufacturing industry

Digital Production



Red Collar Group

- Rapid collection of data about customers' diffused and personalized demands
- Removal of intermediate circulation and achievement of lower transaction cost
- Zero stock, low investment and high return
- Increase in customer stickiness

Digital Rocket



Long March 7

- No paper drawings is required during the entire R&D procedure
- Design is changed from " comic" to "3D film"
- The production and processing stage is accomplished by "one touch"
- Experiment and assembly are done at one time

Digital Plane



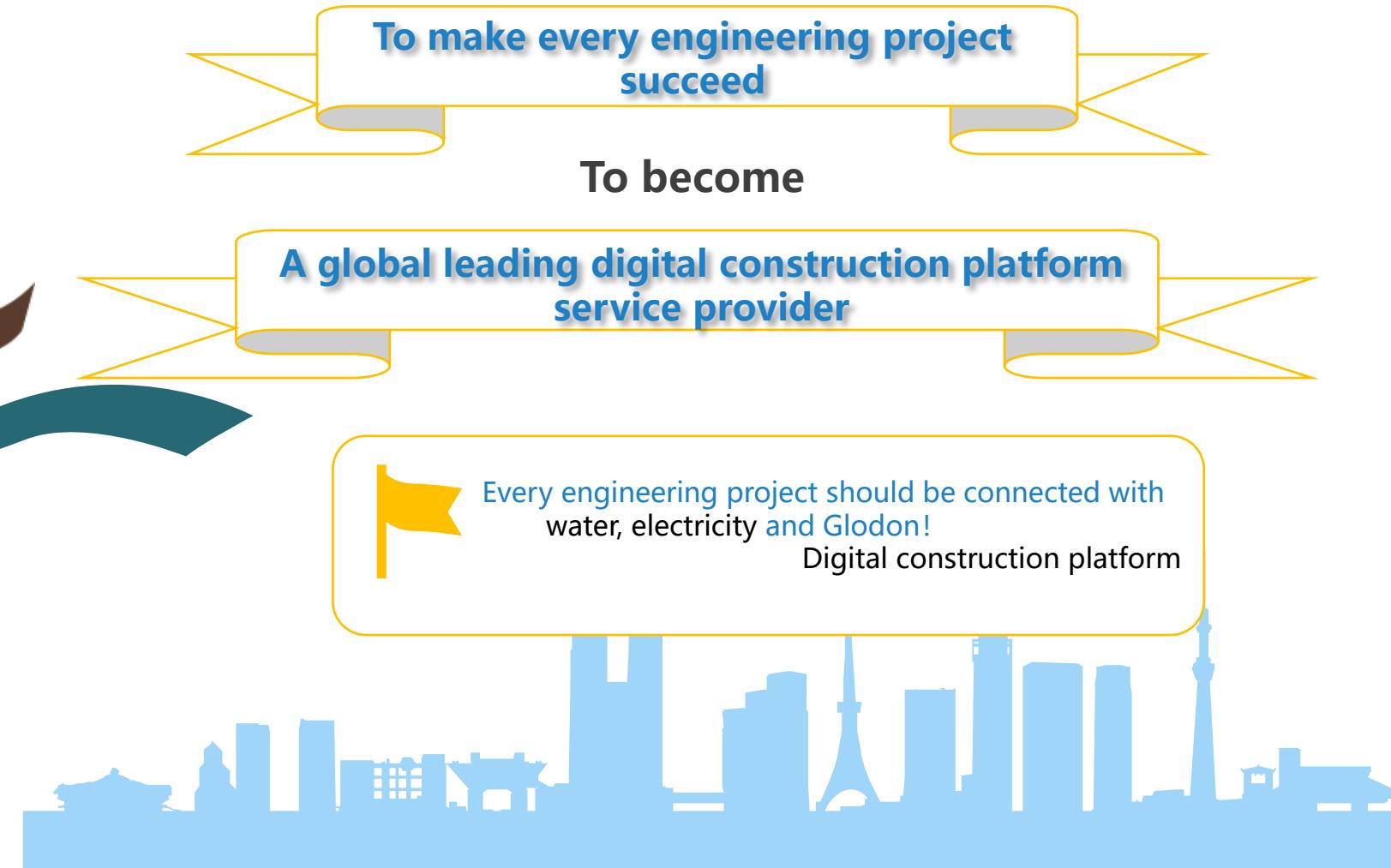
Boeing 777

- The development period is reduced from 9 years to 4.5 years
- The cost is lowered by 25%
- Digital design applies to the 100% overall unit
- The engineering changes are lessened by 90%

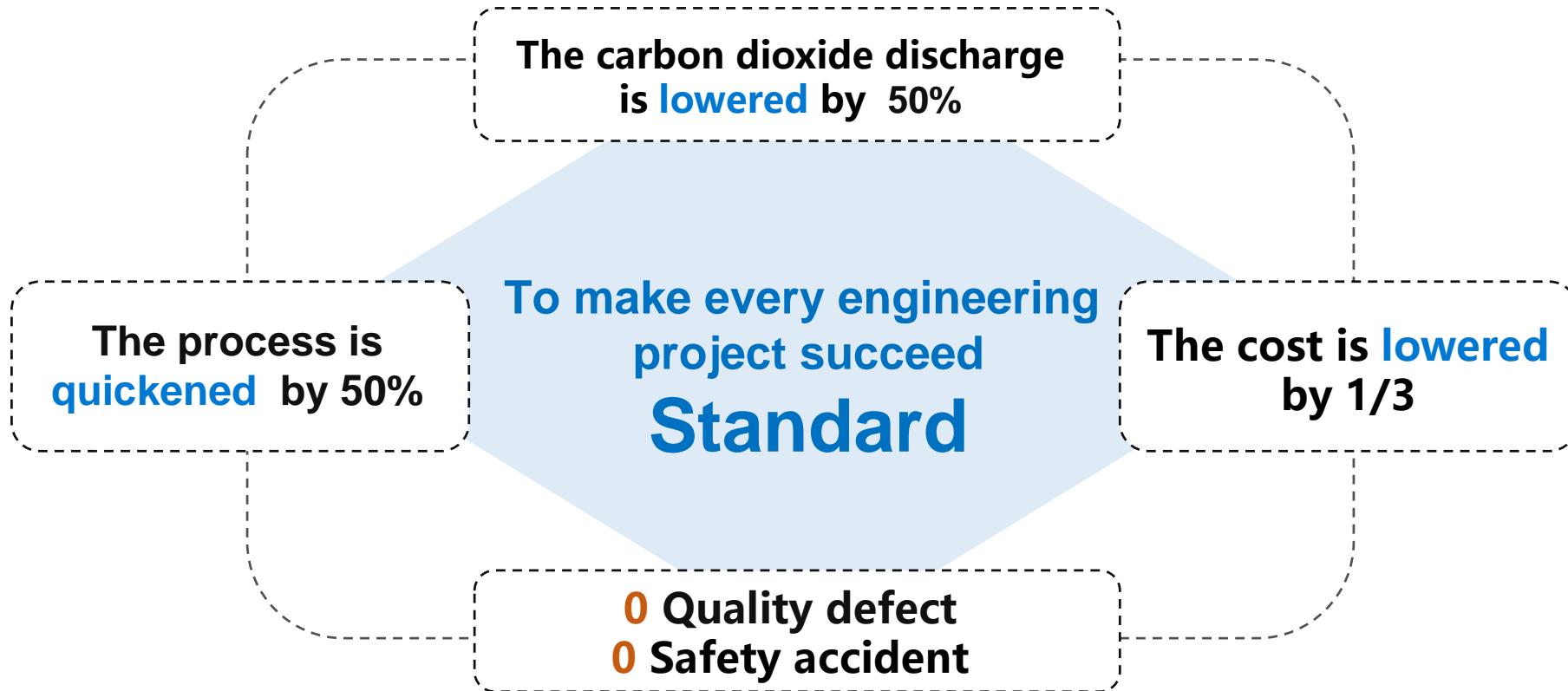
- Mass customized production became possible
- The manufacturing approach changed from physical production to integration of real and virtual production

- Production-based manufacture is transformed into service-based manufacture
- Centralized production is changed into Internet-based collaborative production.

Dreams of the Second Undertaking



One Objective: To make every engineering project succeed



*For the success metrics of projects , refer to the strategies and requirements proposed by the UK government against the construction industry for 2025

One Direction: Industrial Refining Level

To build a digitalized production line through software and data

To promote the construction industry to a modern industrial refining level



Traditional construction and management modes

Modern industrialization level
(greening, industrialization, informationization)

Apple HQ, an “industrial grade” building

1. Painstaking attention to detail

- ✓ The ceiling should be polished both inside and out.
- ✓ Door handles, having gone through dozens of prototypes, are precision-milled aluminum rails like MacBook Pro, integrated into the door frame with no visible bolts.

2. Building design should abide by rigid rules with no less standards than those for Apple products

- ✓ Home button is considered as a benchmark of Apple. Therefore, the elevator buttons resemble iPhone's Home button.

3. High requirement of elaborate level and technology in construction process

- ✓ An incredible tolerance of glass measurements, 1/32 inch (around 0.88 millimeter).
- ✓ No vents or pipes could be reflected in the glass.
- ✓ Guidelines for the special wood used frequently throughout the building ran to over 30 pages.

4. Extremely high acceptance demands

- ✓ Workers had to wear gloves according to strict procedures and specifications so that no fingerprints would have been left.

Connotation of Digital Construction

Digital construction refers to the **industrial strategy** which leads the industry's transformation and upgrading by using such information technologies as BIM, cloud computation, big data, IoT, mobile Internet and AI, etc. Combined with advanced lean construction theoretical methods, it integrates people, procedures, data, technologies and business systems, achieves the **digitalization, online and intelligence** of the construction's **entire procedure, total factor and full participant**, and develops a new platformized ecosystem for projects, enterprises and the whole industry, so as to boost the industrial upgrading represented by **new design, new construction and new operation and maintenance**, and to realize the industrial target – **to make every engineering project succeed**.

Upgrading of

entire procedure, total factor and full participant

Supported by

digitalization, online and intelligence

Driven by

new design, new construction and new operation and maintenance

Formation of

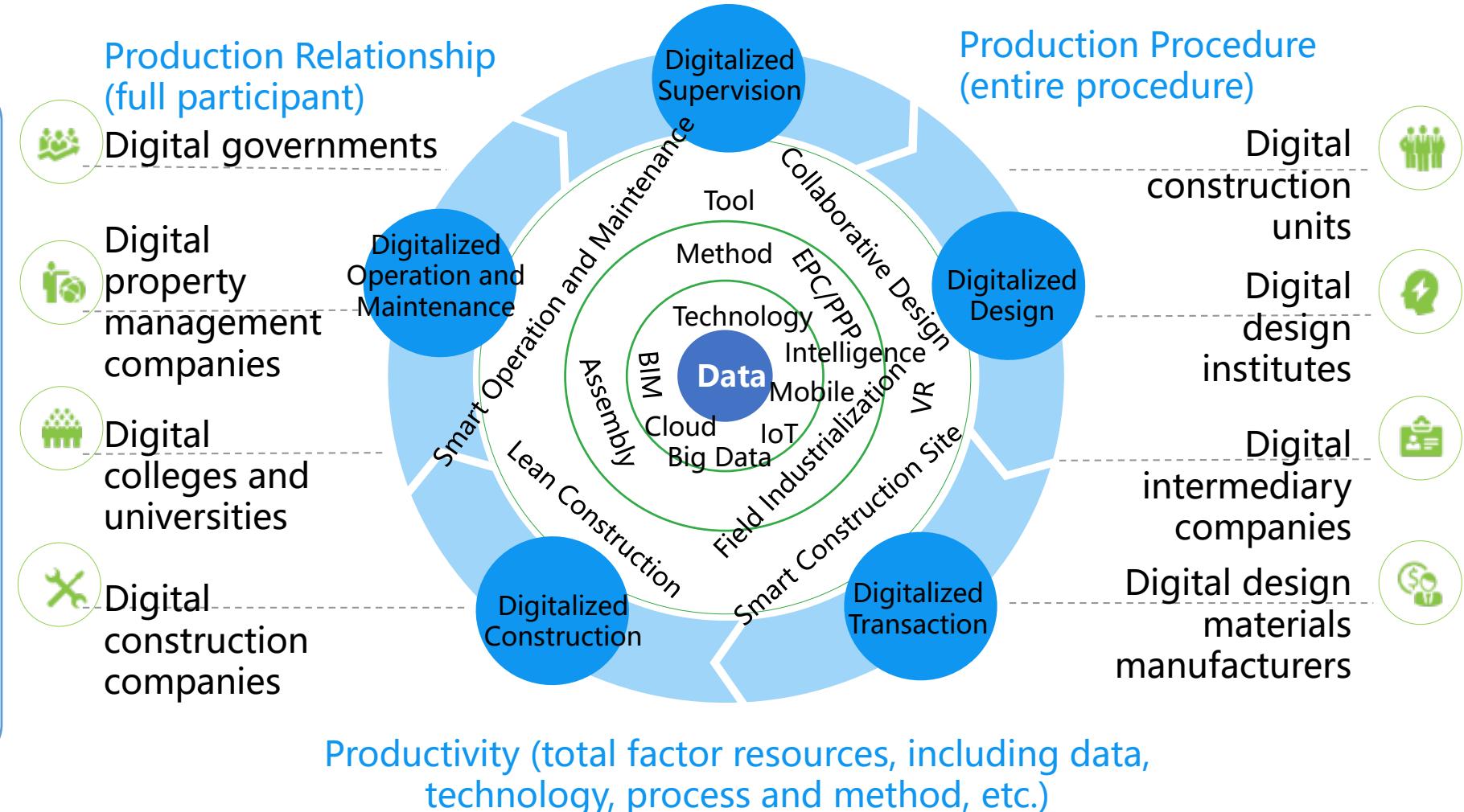
a new digital construction ecosystem

Reflection between real and virtual “digital twin”

Entire Procedure, Total Factor and Full Participant

Features

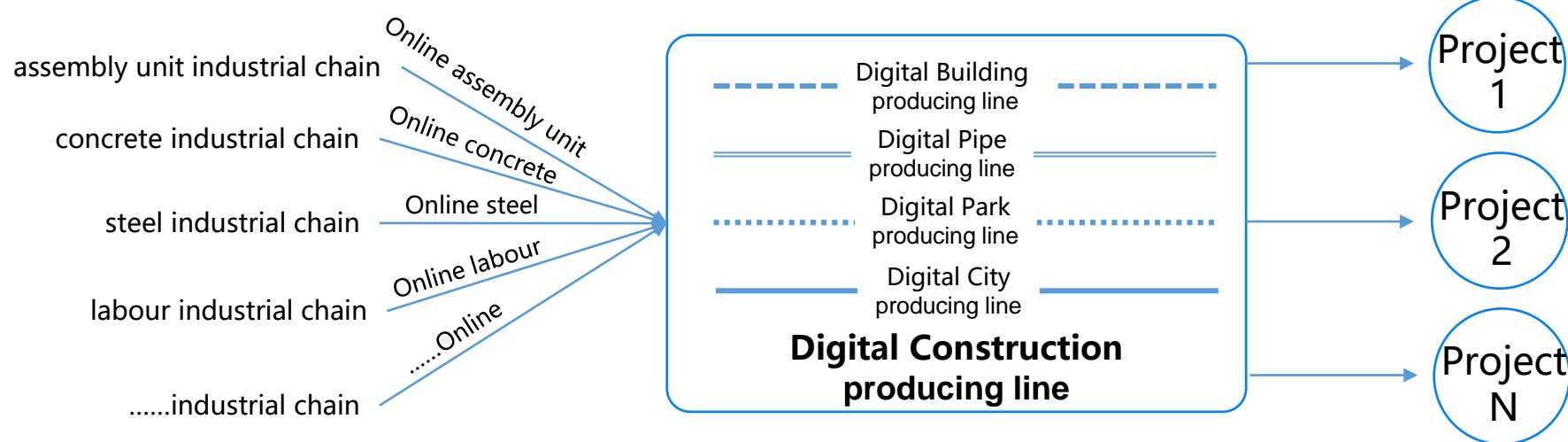
- **Entire Procedure**
The entire lifecycle and process involving buildings' design, construction, operation and maintenance
- **Total Factor**
Management factors (progress, cost, quality and safety, etc.) and production factors (people, machine, material, method and procedure, etc.)
- **Full Participant**
Upstream and downstream participants of the construction industry chain, such as administrative departments in charge of the industry, construction units, design units, builders, suppliers and manufacturers, etc.



Digitalization, Online and Intelligence



Digitalization is the base **Online** is the key **Intelligence** is the goal



New Design, New Construction and New Operation and Maintenance

New Design

Fully-digitalized Samples

- To eliminate various engineering risks and optimize the design, construction plan, operation and maintenance plan and cost of the entire lifecycle through VR and intelligent perception
- To satisfy mass personalized demands (mass customization) through digital construction

New Construction

Industrialized Construction

- The construction process promotes the construction to a refining level of industrial manufacture;
- Drawings are detailed into components, schedule is made for each procedure, and the standardization of procedures and methods is achieved;
- Plant industrialization + construction site industrialization;
- Field informationization + office informationization.

New Operation and Maintenance

Smart Operation and Maintenance

To upgrade the construction into a perceptible, analyzable, controllable and self-adaptive smart system.

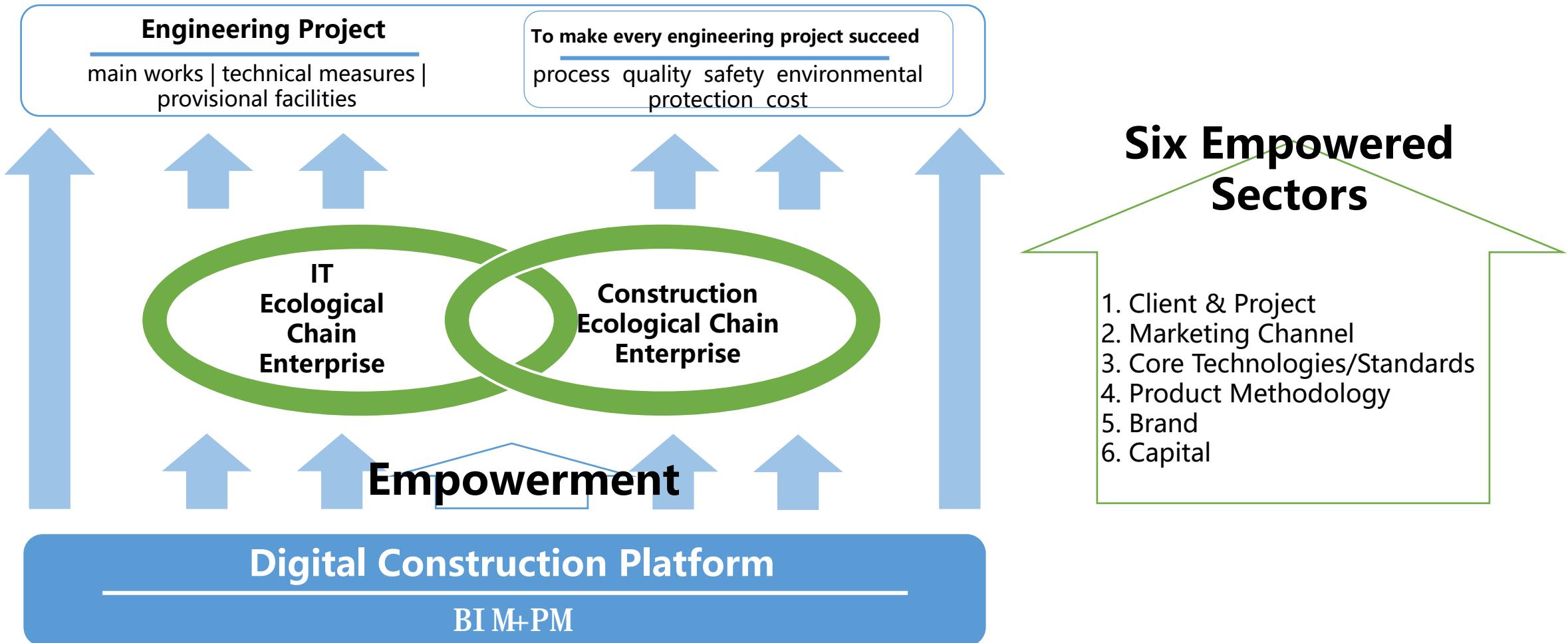
Digital Construction Platform

An Internet platform for construction industry is formed by using such information technologies as BIM, cloud computation, big data, IoT, mobile intelligent terminal and AI, etc. and combining with advanced theoretical methods for lean construction and project management.

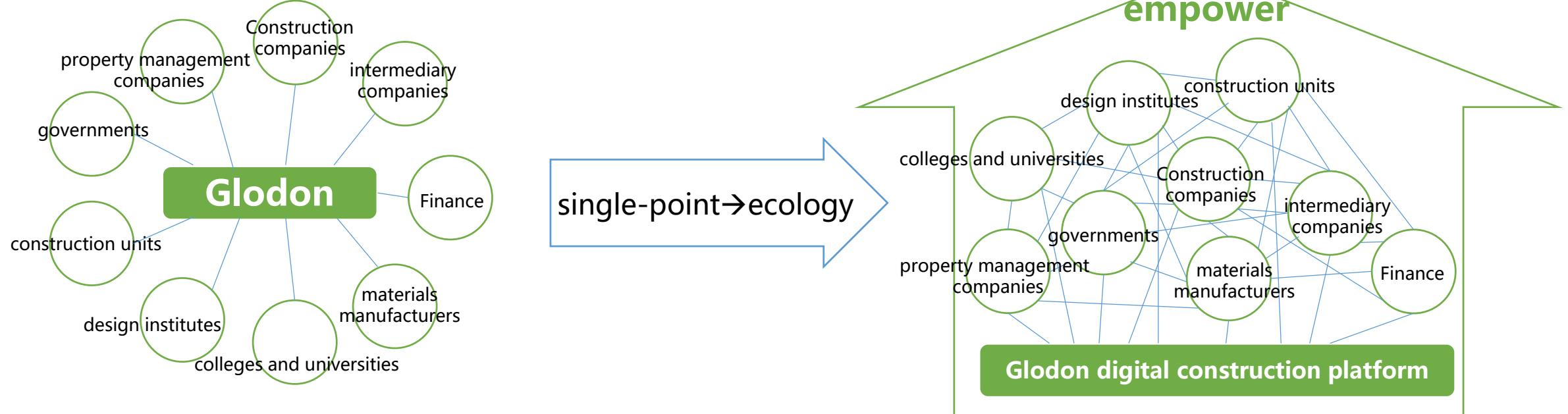


Digital Twin

New Digital Construction Platformized Ecosystem



Digital construction platform empower win-win of ecosystem



Application and Practice of Digital Construction

Project

Wanda Group



Enterprise

Hunan Construction
Engineering Group



Industry

Guizhou Trading Center



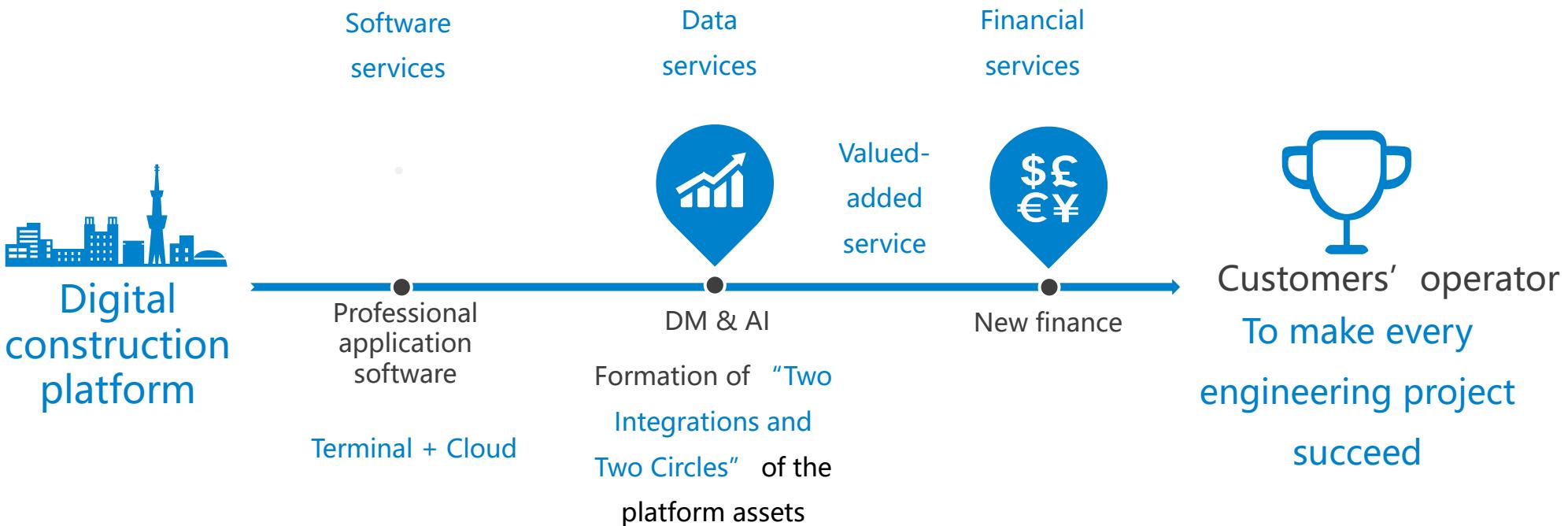
Equipment
& Materials

Kaili central air-conditioning





Strategic Layout: 1+3 Business Development System





Our Future

From first
undertaking



To second
undertaking

- From enabling estimators to throw away calculators
- From professional software application tool
- From an assistor to the construction industry' s development
- From the No. 1 construction cost software in China

- To making every engineering project succeed
- To a digital construction platform
- To a core engine for industrial transformation and upgrading
- To a leading digital construction platform service provider in the world