VeriSM™ Case studies: early adopters

CITIC TECH: USING VERISM™ TO SUPPORT DIGITAL TRANSFORMATION

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Introduction

In this case study, Song Xiang and Deng Hong describe how CITIC Technology Co., Ltd. (CITIC Tech) used the VeriSM™ Management Mesh as a practical managerial instrument to guide top-notch design of digital service management, and to summarize and accumulate best practice for digital transformation and management like a 'vessel'.

About CITIC Group

As China's biggest conglomerate, CITIC Group operates in financial services, resources and energy, manufacturing, engineering contracting, real estate and others. According to the latest Global Fortune 500 rankings released by Fortune Magazine, CITIC Group is ranked 172nd with an approximate operating income of $64,720.56 million USD and a net profit of $8,823.73 million USD.

CITIC Tech was founded in 2016 to boost the digital transformation of the conglomerate and to act as the main player for technological empowerment and business ecological transformation.

Digital strategies

CITIC Group has taken the initiative to put into force digital transformation strategies. On August 29, 2016, it launched the 'internet + transformation' strategy and proclaimed that it would adopt the principle of openness and sharing. Additionally, CITIC Group would employ internet technologies, such as cloud computing, big data and the Internet of Things. This would change its previous point-to-point and project-to-project business communication and collaboration model, which put capital as the bond, so that new cross-border applications and collaborative scenarios could occur. With its year-long ample offline industrial resources, the Group is no longer a simple corporate island but an organically-melded industrial ecology with valuable online data assets piling up that further elevate its platform values and associated effects.

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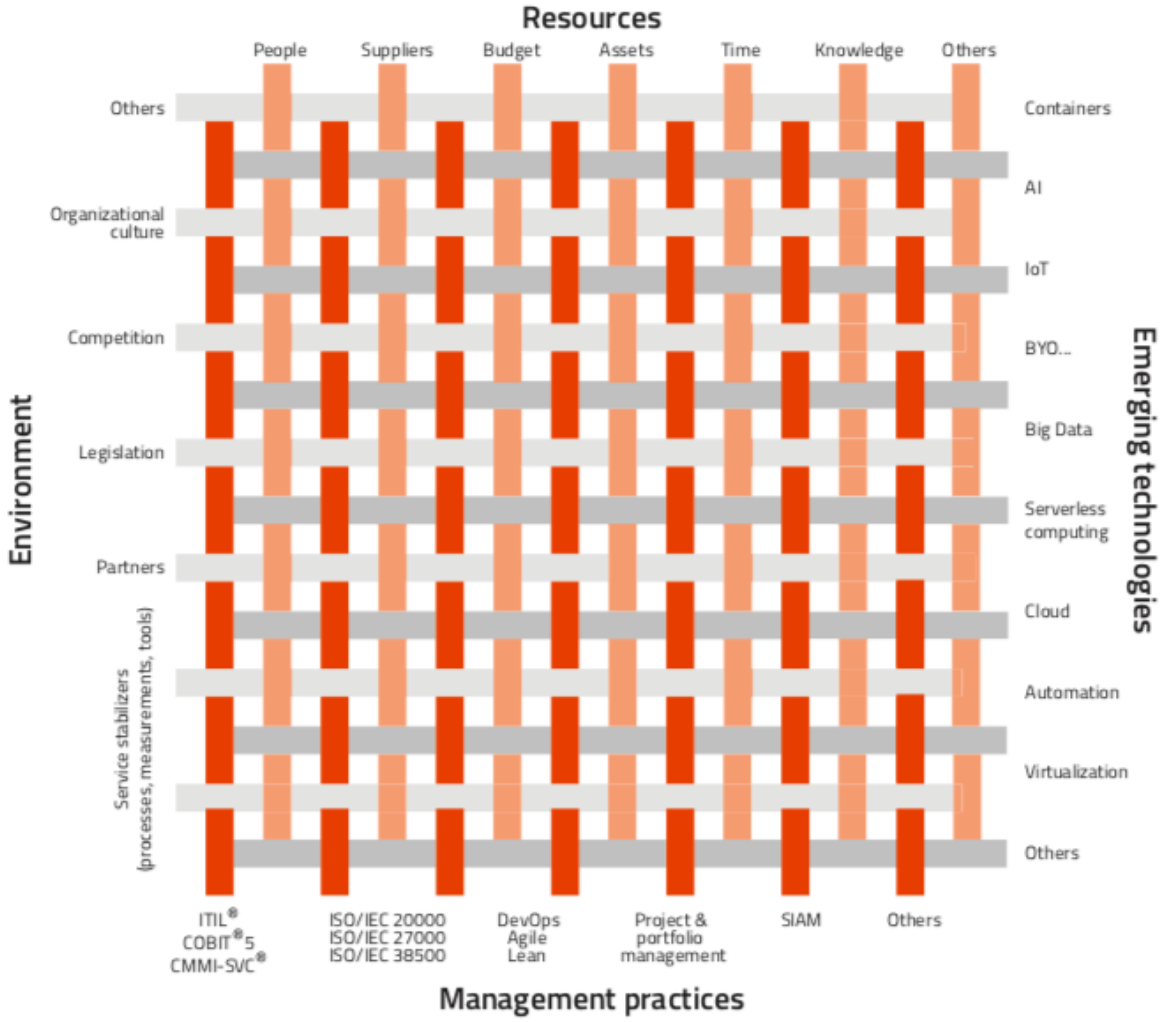
In this case study, CITIC Group explains how the Management Mesh is used to summarize and state how it implements digital strategies. They started from the generic Management Mesh.



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Resources

Since launching CITIC Group's 'internet + transformation' strategies, CITIC Group has adopted the following procedures to implement the strategic transformation:

a) Set-up of the 'internet + transformation' supervisory team and execution teams;

- Guided by the management of the Group, the provision of science and technology is to be forged into a new core capacity alongside asset and brand. Through internal and external collaboration, the organization promotes innovation and entrepreneurship, defining a number of projects for business development in the Group and its branch companies;

b) Set-up of the management organization;

- Regarding organizational resources, the Group established CITIC Cloud, a service-oriented organization. The president of CITIC Group is the new organization's president. CITIC Cloud is undertaking the task of 'internet + transformation' in the conglomerate;

c) Set-up of technology organization;

- CITIC Tech was established under CITIC Cloud. Using a market-based operational model, it has recruited and cultivated over 200 talented staff members on internet technologies. It is dedicated to three core missions of 'connectivity, congregation of users and production of data'. With scientific and technological innovation as the bond:
    - It forges the internet empowerment platform in CITIC Group;
    - It propels the collaboration and aggregation of superior resources in CITIC Group, its subsidiary companies and its partners;
    - It facilitates the formation of an industrial ecosphere of 'co-production, co-building, co-existence, and co-winning' with CITIC features;
    - It boosts its holistic values.

New technology

'Internet + transformation' can't do without advanced technologies. CITIC Cloud is a technology empowerment platform built by CITIC Tech to drive the horizontal interconnectivity of industrial resources and to attract new cross-field applications and collaborative environments, and a concentrated embodiment of advanced technologies. A hybrid cloud-computing platform, based on cloud intermediary model, CITIC Cloud platform

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fuses cutting edge technologies, such as leading cloud computing, big data, the Internet of Things, mobile internet, blockchain, and artificial intelligence technology. It has developed three platforms namely laaS, PaaS and SaaS that provide 'front-edge, secured, good quality and low-priced' cloud services and solutions for subsidiary organizations under CITIC Group.

Practice of management

The implementation of an ISO/IEC 20000 service management system and an ISO27001 information security management system supports CITIC Tech in management, operation, information management and other areas. The development team adopts Agile software development methods to deliver a quick response from IT to the business. Construction of a DevOps (development and operations) integration platform achieves automation of development, testing and deployment of software. An ITIL-based IT service management platform helps service operation and maintenance.

Digital transformation

Empowerment transformation model
Drawing reference from VeriSM™'s Management Mesh led to the design of the CITIC Cloud empowerment transformation model (see picture below) for client organizations. It translates business values from four levels: 'capacity building', 'capacity output', 'capacity transformation' and 'business values'.

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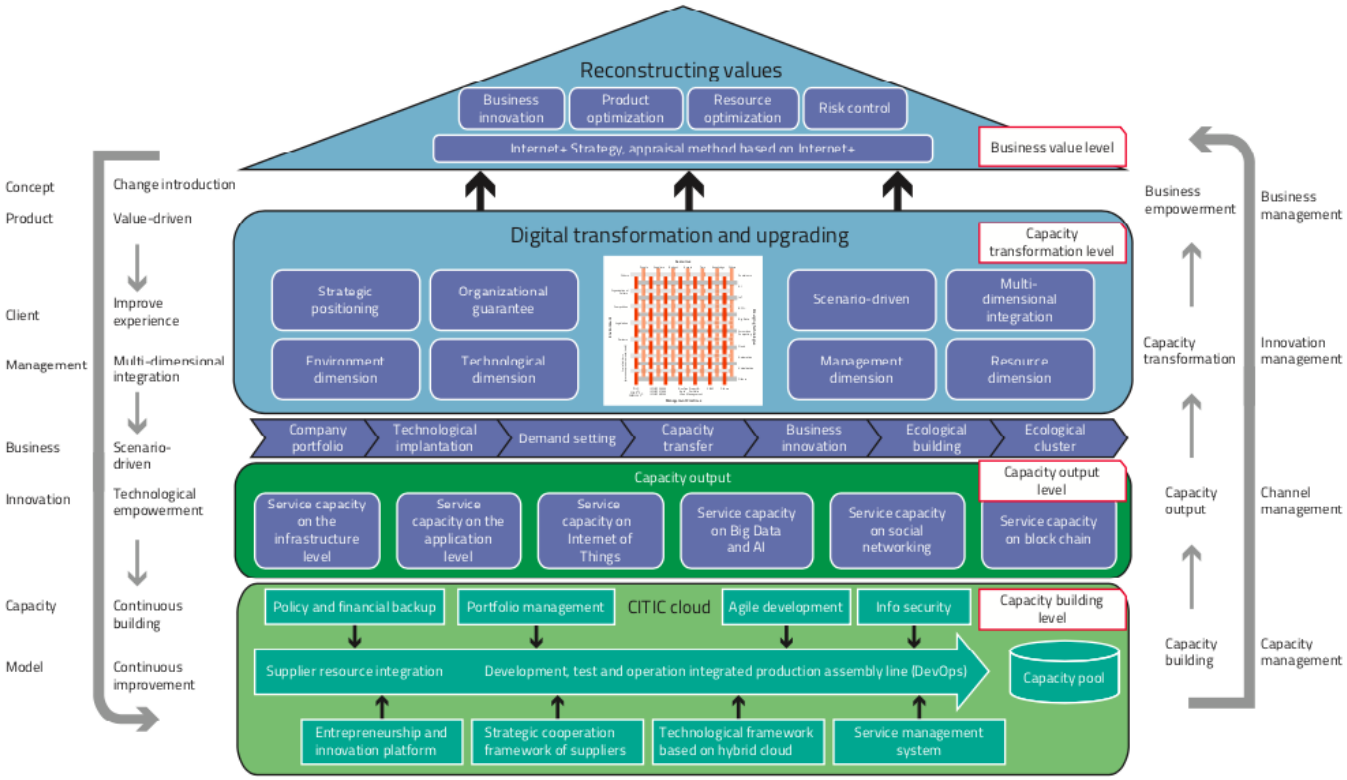

Capacity output

With a vision of building an ecological cloud alliance, CITIC Tech co-mingles four models (business, technology, management and service) with the model of building a cloud platform. Its output is six emerging technological competences – cloud computing, Big Data, Internet of Things, mobile networking, artificial intelligence and blockchain – to its internal subsidiary organizations and other conglomerates via the cloud platform.

- Output of service capacity on the infrastructure level:
  This covers IaaS cloud service, PaaS cloud service, cloud framework building, private cloud and output of Oracle product capacity. It covers such core cloud resource services as computing, storage, internet, safety and database. It includes four sectors namely consultancy, implementation, backup, and proxy.

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- Output of service capacity on the infrastructure level:
  This covers tax receipt cloud service, videoconferencing system, unified OA portal, cloud platform for unified files, solution for corporate collaborative office-running, application/networking/terminal performance surveillance platform, secured upgrading and transformation, cloud platform for financial management, cloud platform for data recording, cloud platform for concentrated analysis, analysis and display platform of big data, secured plan of SaaS model etc.

- Output of service capacity on the Internet of the Things:
  This covers the universal internet development platform, safe and stable maintenance of the Internet of Things platform, solutions for Internet of Things for specific industries and application and development.

- Output of service capacity of Big Data and Artificial Intelligence:
  This includes the Big Data basic service, data analysis and visualization, data application, and artificial intelligence etc. that can help companies glean and excavate data resources and accumulate Big Data advantages.

- Output of service capacity on mobile networking:
  By referring to such internet technologies as cloud computing, Big Data and mobile networking, this area delivers a business collaboration platform and industrial ecological platform for the Group, its subsidiary organizations and its external partners. CITIC Cloud, the platform organization, can be combined with the CITIC industrial ecology to share resources and risks. With ecological strength, this boosts the organization's comprehensive competitiveness. It links its internal and external resources with other CITIC organizations and provides services for office-running, collaboration, life, culture etc.

- Output of service capacity on blockchain:
  Blockchain is a new applied model of computing technologies such as distributed data storage, point-to-point transmission, consensus mechanism, and encryption algorithm.

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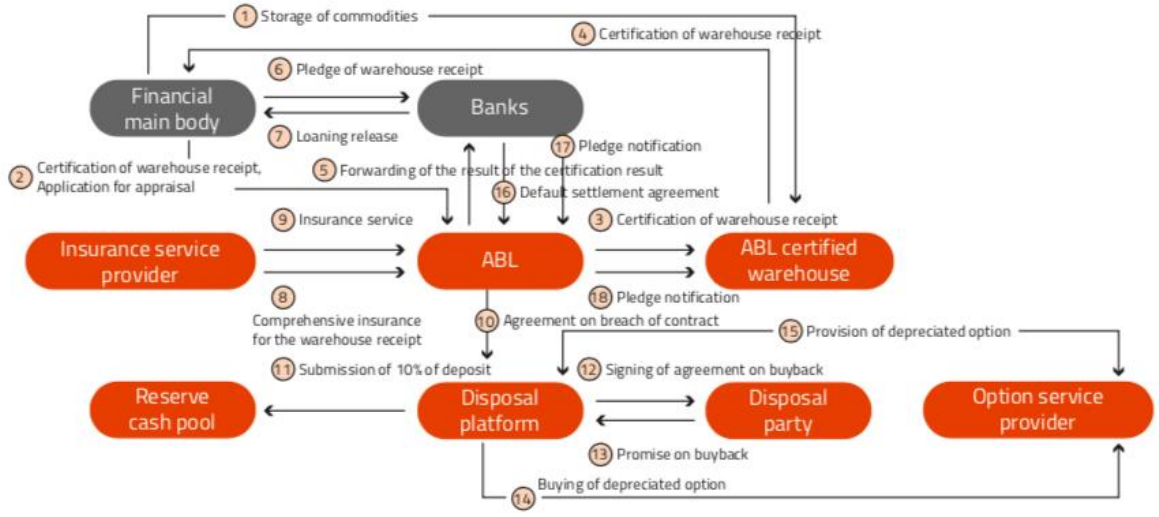
Practice of digital business

Successful cases on CITIC Cloud's replacement of traditional businesses through transformation with its six technological capacities are many. This section shows 'smart warehouse logistics' as an example to explain how to link the upstream and downstream through digitalization.

Warehouse logistics is a common challenge for many organizations. Its core flow is shown in picture available below. As a major document of title and audit trail for commodity circulation, it also carries strong financial features. However, it doesn't have an acceptable management and approval system when it comes to authorizing and crediting warehouse receipts. This means that warehouse receipts are held back in terms of stock levels, payments and logistics. They fail to satisfy the needs of stakeholders such as traders, banks, stock markets, insurance organizations and so on.

While tackling these challenges, CITIC Cloud deployed the Internet of Things and blockchain technologies to the cloud platform for warehousing supervision, the cloud platform for warehouse receipt management, an offline warehousing supervision mesh and a reliable ecosystem of warehouse receipts to address the issues of authorizing and crediting warehouse receipts. Establishing reliable warehouse receipts called for the backup of sensors, the Internet of Things and blockchain technologies. The financial ecosystem of the supply chain that covered producers, traders, warehouse staff, stock markets, banks, insurance organizations, security, and so forth was set up by linking the upstream activities with those downstream and financial services through credible warehouse receipts.



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With nonferrous metal as the pilot in the early stages, and CITIC Wutong Port Supply Chain Management Company as the main operational organization, it provided an individual solution to the supply chain for the subsidiary organizations and external clients. Integration of upstream and downstream trade, logistics, capital flow and information flow helped to generate highly-correlated business data in a bid to achieve dynamic risk control, before improving the upstream / downstream supply chain efficiency, reducing operational costs and realizing the values of digital transformation.

Summary

By May 2018, CITIC Tech had assisted 150 subsidiaries in digital transformation. CITIC Tech is exploring breakthroughs on multiple fronts including organization, business, technology, management and culture. The key factors of successful digital transformation are listed as below.

Policy and organization

Digital transformation is restructuring at the organizational level. Business innovation, technology upgrades, financial backing and organizational restructures all call for vigorous support by the executive managers in the organization. During the process of digital transformation, CITIC Group provided support for digital transformation on the following three levels:

- A special guidance committee namely 'internet + transformation' supervisory team, under direct leadership of the top executive of the Group to address financial backing;
- The platform service organization, CITIC Cloud, to address issues on business orientation, innovative incubation and investment;
- A scientific and technological organization, CITIC Tech, to address the issues on scientific and technological output and commercial transformation.

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Building of infrastructures for digital transformation (hybrid cloud)

Regarding infrastructure utilities, CITIC Group involved multiple industries and its subsidiary organizations in varying sectors – all with disparate demands. Both a private cloud and singular public cloud fell short of fully satisfying all demands. In response to this challenge, CITIC Cloud adopted the strategy of building a hybrid cloud. While building its private cloud, it released the public cloud and introduced an advanced Oracle database cloud service to satisfy the demands on the infrastructure level in its subsidiary organizations. Upon completion, various workloads and business activities under CITIC can trace their resources through CITIC Cloud.

Agile development assembly line

For the software development stages, it introduced an Agile development project and achieved its goal through the use of sprints. During the whole development process, timely responses were provided to changes in business demands so that innovative technology could quickly deliver business benefits, under the controls of a systematic methodology.

To deliver software products and services on time, the development, IT operations and quality assurance departments worked together, constructing an automated assembly line for development and maintenance, by implementing DevOps. They also established key performance indicators based on five dimensions: speed, quality, security, staff satisfaction, and the input-output ratio of return on investment (ROI).

Data interconnectivity

Issues such as data integrity, difficulty during implementation, low input-output ratio and the integration between industries create barriers to realizing the value of data in an enterprise. The biggest challenge lies in the combination of data and production experience, as well as gathering, integration and analysis of basic data.

Through data application, positioning of label imaging, cross-system correlation of data and data source integration, CITIC Tech delivered business benefit to China CITIC Bank, CITIC Securities, CITIC Prudential, CITIC Press Group, CITIC Holding, China Asset Management and

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more. This was in terms of credit integration, membership management, smart forwarding, joint marketing and offline integration. At present, CITIC Cloud has realized data interconnectivity on three levels, namely user, payment and connector, leading to better visibility of business and data resources in its subsidiary organizations.

The business benefits

- Developed a breakthrough process on multiple fronts, including organization, business, technology, management and culture;
- Improved supply chain efficiency;
- Reduced operational costs;
- Value realization from digital transformation;
- The VeriSM™ Management Mesh was leveraged to develop and implement digital strategies;
- Developed six new technological capabilities that are being used throughout the organization;
- The conglomerate is transforming from islands of technology to an organically-melded industrial ecology.

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