

Service-oriented Manufacturing Demonstration Initiative Policy Briefing | November 2022

Service-oriented manufacturing (SOM), 服务型制造 in Chinese, refers to the integration of Intelligent Manufacturing and service industries to optimise production efficiency, operation management and to create new business models. SOM supports industrial value chain upgrading by providing innovative, data-driven products and services for both manufacturers and end consumers. As early as 2015, SOM has been declared pivotal to improve the national manufacturing value creation and competitiveness in the Made in China 2025 Strategy, with the first official SOM demonstration selection programme kickstarting in 2017. According to the Chinese Academy of Sciences in 2021¹, SOM innovations remain crucial for the 14th Five plan (2021-2025) to upgrade national manufacturing value chains.

This briefing provides an overview of relevant policies directing China's SOM industrial development and leading examples from the latest selected SOM demonstration use cases in 2021.

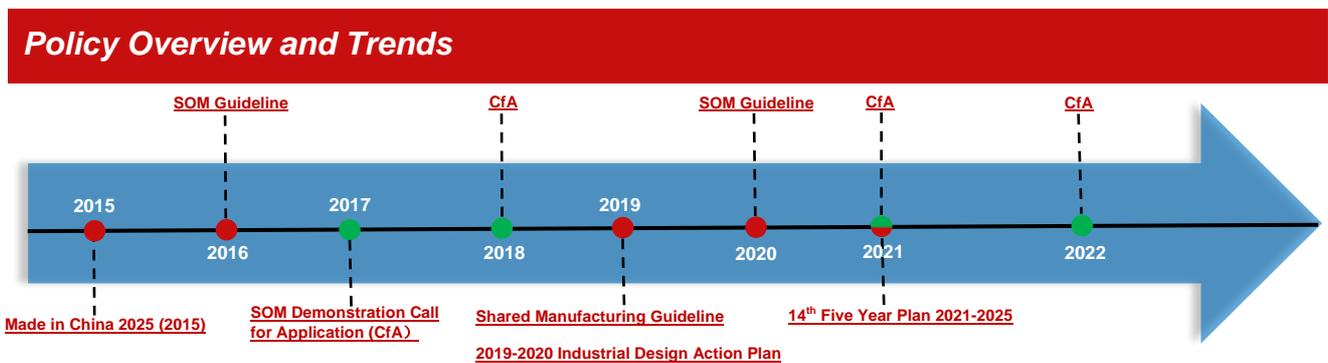


Figure 1²

The guiding policies and action plans determine the selection criteria and scope of SOM demonstration projects. According to the 2016 and 2020 guidelines, key factors that support SOM innovations include manufacturing services in industrial design and customisation, supply chain and lifecycle management, shared manufacturing, energy efficiency and environmental protection. The 2019 guideline and 2019-2020 Action Plan indicate a stronger focus on national shared manufacturing³ and industrial design capabilities respectively after the 2018 CfA. Furthermore, the 2020 guideline has highlighted more resource-efficient and environment-friendly SOM applications through shared manufacturing and green industrial designs.

Examples of MIIT's selected SOM Demonstration Use Cases

Applicants can apply for one of four SOM demonstration categories. Since 2018, these categories include demonstrations in companies, platforms, projects and cities. The use cases shown below are selected examples from [MIIT's latest list of selected SOM demonstration use cases](#) released in 2021.

¹ For more information on this CAS commentary in Chinese, please access [here](#).

² 2016 Guideline refers to the Specific Guideline for the Service-oriented Manufacturing and 2020 Guideline refers to Guideline on Further Promoting the Development of Service-Oriented Manufacturing. The full title of Shared Manufacturing Guideline is the Guideline on Accelerating the New-model Cultivation of Shared Manufacturing for High-quality Industry Development; the full title of 2019-2020 Industrial Design Action Plan is 2019-2020 Action Plan for Industrial Design Capability Improvement.

³ Shared manufacturing refers the on-demand sharing of production inputs among self-organised individuals or entities supported by Intelligent Manufacturing technologies.

➤ **Automotive Industry**

Lifecycle management: The subsidiary of the Shaanxi Automobile Group has developed an Internet of Vehicles platform. The platform offers intelligent lifecycle management services to remotely monitor and manage fleet logistics and muck lorry real-time conditions. Furthermore, the platform uses Big Data analytics to collect and assess dynamic and static data on automotive operations.

➤ **Machinery Industry**

Shared manufacturing: National Innovation Institution of Additive Manufacturing (AM) launched an AM cloud platform (known as AMSphere). Apart from offering order-based AM collaboration services, the platform can remotely monitor connected 3D printing equipment and help resolve service providers' financing problems. The primary aim of AMSphere is to integrate national AM machines to a unified cloud factory to enable real-time machine monitoring and on-demand ordering.

➤ **Electronics Industry**

Value creation services: China Electronics Corporation (CEC)'s Industrial Internet joint company has developed the trusted Industrial Internet platform that offers the Industrial Internet security service based on China's hardware and software PK (Phytium and Kylin) system's cloud. For example, a Blockchain+Industrial Internet is set up for businesses. This trusted Industrial Internet platform provides services to corporations and local governments and industrial clusters.

Observations

- In the [2018 List of SOM Demonstration Use Cases](#), the official company and project selection categories cover SOM areas in supply chain and lifecycle management, value creation services and total contracting services. Category platforms are selected based on industry-specific services or region-wide integrated services. Cities, who are eligible to apply as demonstration use cases, need to display concrete policy measures and development progress in the SOM sector.
 - In comparison, the [2021 List](#) has added new subcategories dedicated to shared-manufacturing applications. There is no longer an official categorisation of selected SOM use cases. A trend towards environment-friendly SOM applications can be observed in 2021.
- Both 2016 and 2020 guidelines have encouraged domestic enterprises to seek international recognition of Chinese SOM applications and even promoted to actively create SOM cooperation projects located outside of China. However, against the backdrop of the COVID-19 pandemic, the 2020 Guideline urges for upgrading the national manufacturing towards SOM based in China and to connect domestic SOM applications with global supply chains instead of operating them abroad.
 - The 2020 guideline highlights SOM cooperation with China's Belt and Road Initiative partners and openly seeks foreign investments to develop SOM businesses in China.
- Related readings on business model innovation in China: "[Value Networks as the Foundation for Digital Business Models](#)" and "[Digital Business Models as Drivers for Sustainability](#)" provided by the Sino-German Expert Group on Digital Business Models.

Your comments and suggestions to info@i40-china.org are highly appreciated. More policy products can be found in our [download area](#). For more information, please visit the Sino-German Industrie 4.0 [Project Website](#).