



## Shipbuilding: Appendix A- Case Studies of innovative projects

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### 1. China's Shipbuilding Story : Increased focus on R&D

China is the one of the leading shipbuilding country in the world. As of the end October 2010, China's production completion of shipbuilding was 50.90 million deadweight tons (dwt), an increase of 58.4%, and new orders of the industry were 54.62 million dwt or 2.9 times that of the same period last year, respectively.

Following an initial period of basically low-end commercial shipbuilding - such as bulk carriers and container ships - China's shipyards have since the mid-1990s progressed toward more sophisticated ship design and construction work. In particular, moving into commercial shipbuilding began to bear considerable fruit beginning in the late 1990s, as Chinese shipyards modernized and expanded operations, building huge new dry-docks, acquiring heavy-lift cranes and computerized cutting and welding tools, and more than doubling their shipbuilding capacity. At the same time, Chinese shipbuilders entered into a number of technical cooperation agreements and joint ventures with shipbuilding firms in Japan, South Korea, Germany, and other countries, which gave them access to advanced ship designs and manufacturing technologies - in particular, computer-assisted design and manufacturing, modular construction techniques, advanced ship propulsion systems, and numerically controlled processing and testing equipment. As a result, military shipbuilding programs collocated at Chinese shipyards have been able to leverage these considerable infrastructure and software improvements when it comes to design, development, and construction.

To promote indigenous innovation and R&D capability of domestic enterprises, apart from improving existing ship models, China has invested more on high-tech and high value-added technologies such as environment-saving and energy-efficient shipbuilding, maritime equipment projects, and critical internal equipment within ships. China is also developing its offshore drilling rig industry as a future alternative to traditional shipbuilding. Many large enterprises in China are starting their production of rigs for both domestic and foreign orders.