



系統整合與客製化的能力將是 台灣機器人產業發展的關鍵

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- 系統整合 System Integration
- 客製化 Customize
- 機器人產業 Robot Industry

摘要(Abstract)

新世代機器人最大的特點是多了智慧、可以被快速的教導和學習，它仿佛有了常識，可以執行人類想要的動作。機器人為自動化核心的生產製造革命如火如荼的進行中，隨著技術的進步，工業機器人從過去只能做簡單、重複性高的工作，轉變成高精密度且具備智慧化系統的機器。

中國大陸因豐沛的人口紅利造成當地工業機器人起步較晚，但當地人工問題正逐漸蔓延，所以智慧型機器人應用將快速增加，未來成長空間值得關注。日本智慧機器人技術能夠長年居於領先，主要原因是製造業對機器人應用的高度倚重，加上積極投入製程創新並擁有完善的零組件供應體系。美國擁有多項關鍵技術，其為產品競爭力的核心，在製造業大舉回流的浪潮下，未來將有可能站回自動化產業的制高點；另外歐洲的工業國家，例如德國、法國、瑞典在智慧機器人的起步亦早，長



年累積的技術已對有心追趕的國家造成時空不對等的競爭。

台灣在直線型、直角坐標型機器人已有不錯的應用實績，在多關節機器人、相關零組件的發展上正逐漸追趕中，未來機器人系統整合與客製化的能力將是台灣機器人產業發展的關鍵。

The biggest feature of new generation robots is the augmentation of intelligence, which can be taught and learn quickly. As technology improves, industrial robots has transformed from doing simple and high repetitive work in the past to become machines with high precision and intelligent systems.

While the abundance of people population in Mainland China has resulted in its slower startup in industrial robotics locally, it gradually worsening labor shortages is leading to the swift acceleration of applied use of intelligent robots, and its growth in the future is worth noting.

The key reason that Japan's development in intelligent robotics technology has been able to play a leading role for so many years is because of the heavy reliance of its manufacturing industries on the applied use of robots, in addition to its active investment in innovation manufacturing processes and possession of a comprehensive component supply chain system. The U.S owns many key technologies which form the core of its product competitiveness, and with the wave of manufacturing industries returning back to American shores, there is the possibility that its automation industry is able to regain back its commanding spot. Also, the industrial countries in Europe such as Germany and France started out earlier on intelligent robotics, its technologies accumulated over the years has formed an uneven competitive landscape over the pursuing countries.

The straight line model and right angle coordinates model of robots in Taiwan have achieved better than average actual results. However, with the development of the articulated robot and its relevant components fast on its back. In the future, The robotic system integration and customization capabilities will be key to the development of the robotics industry in Taiwan.

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