The Minitab Blog

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匯集客戶聲音、Kano 模型和數據分析，加快醫療器材設計時間

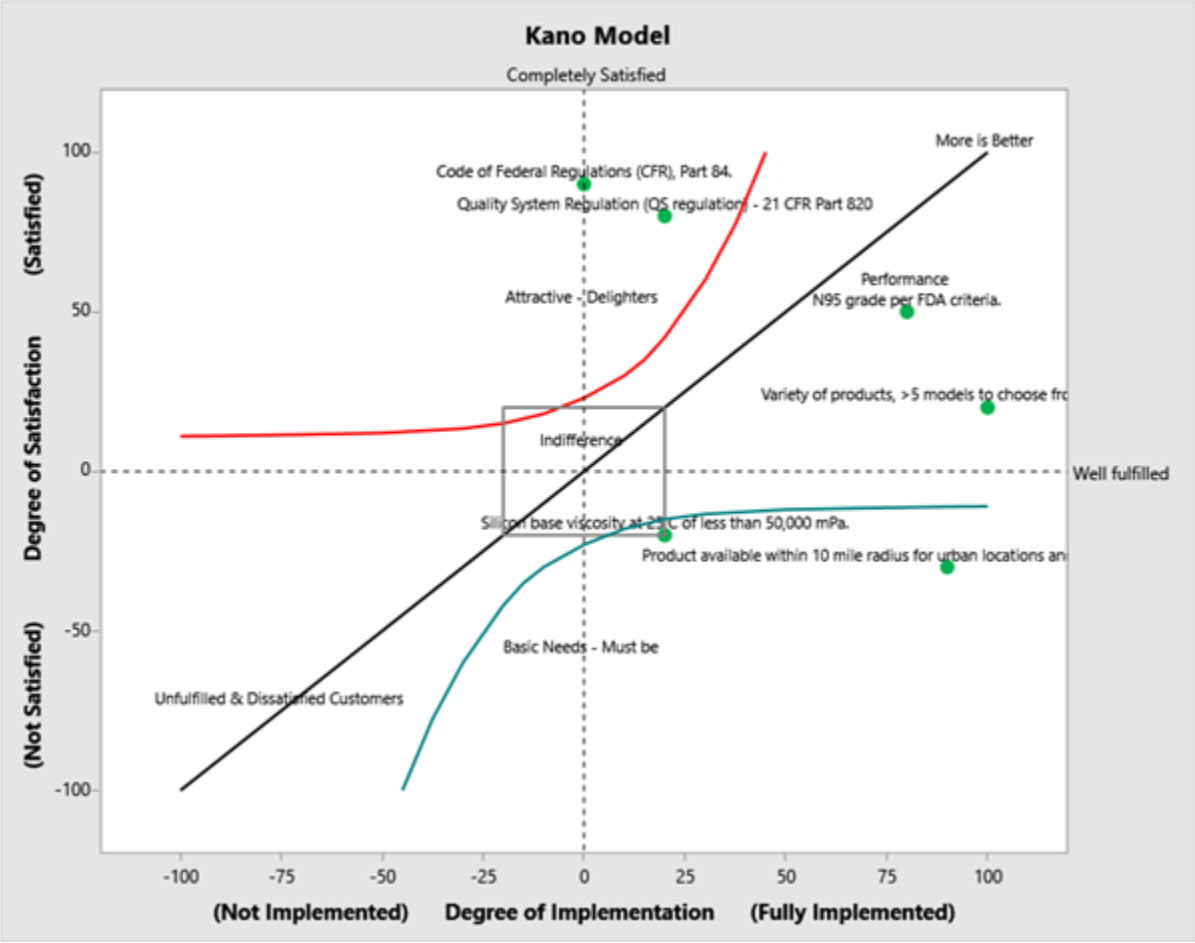
Minitab Blog Editor 24 September, 2020

最近發生的全球事件促使我們所有人類變得更加敏捷，並以全新方式應對改變，這已不是什麼大秘密。醫療器材製造商已然成為關注的焦點並尤其重要。

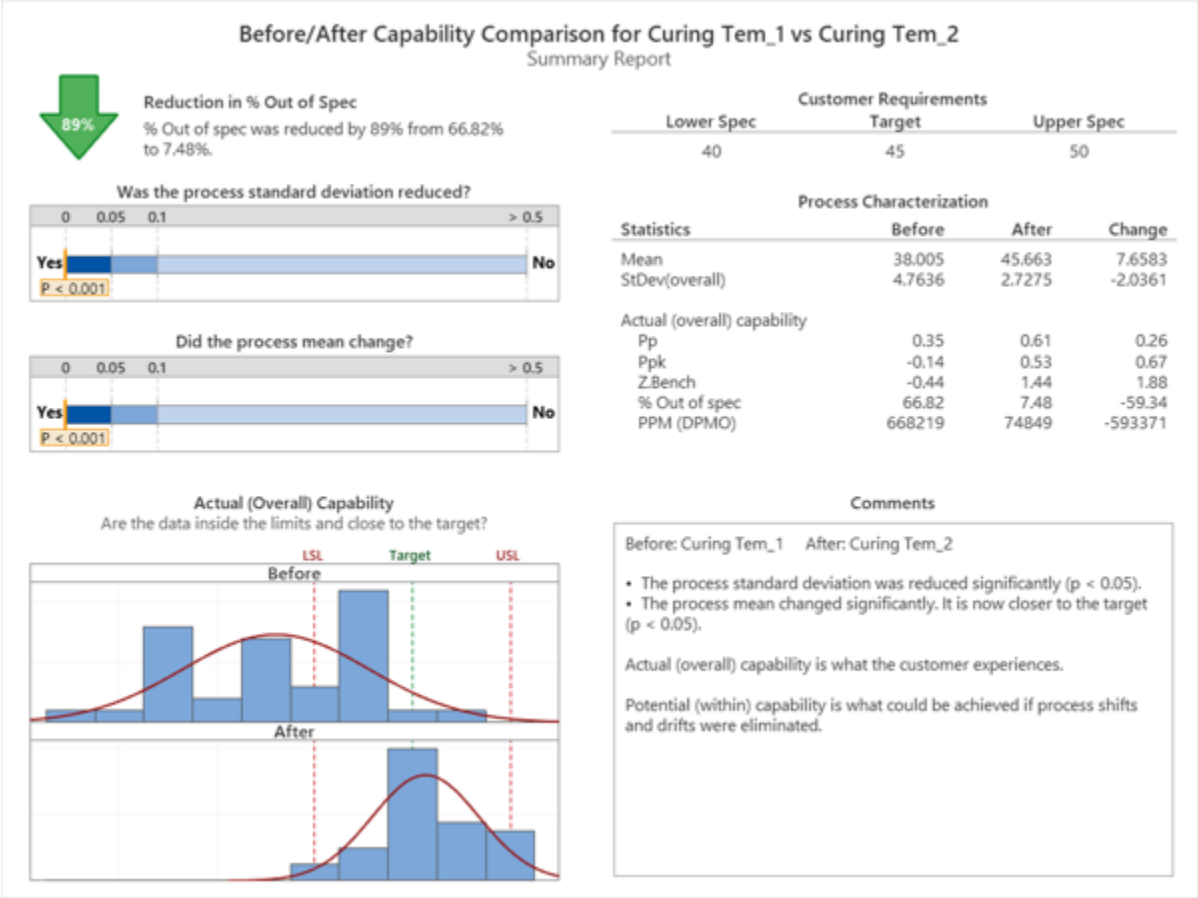
讓我們看看一家醫療器材製造商的產品開發團隊，了解他們如何以全新方式並比以往更快速將臨床等級的個人防護設備推出市場。

團隊被要求在接下來的 12 週內進行設計、測試並製造臨床等級呼吸器，其中每一個總生產成本要低於 $15 美元。

Customer	Voice of Customer	Key Customer Issue(s)	Customer Requirements
Who is the customer?	Actual customer statements or comments.	The real customer concerns, values, or expectations.	What are the specific and measurable customer requirements?
Hospitals and clinics staff	"I need a N95 respirator that I can wear for 12+ hours."	Comfortable to wear for extended periods of time.	N95 grade per FDA criteria.
Private healthcare providers	"I would like a translucid, easy to carry, compact face mask that does not get dirty easily ."	Transparent material	Silicon base viscosity at 25 C of less than 50,000 mPa.
Registered Nurses	"We need respirators that can be reusable and offer protection against a variety of pathogens."	Clinical grade material that meets or exceeds NIOSH regulations	Code of Federal Regulations (CFR), Part 84.
Family doctors	"It would be great to face masks that I can find at chain pharmacies."	Product available at main pharmacies.	Product available within 10 mile radius for urban locations and 50 miles for country side.
Occupational nurses	"I am looking for a face mask that I can wash in my washing machine or by hand, with cool designs for less than $5.00 a piece."	Fashionable, resistant and inexpensive product.	Variety of products, >5 models to choose from, under $5.00 each.
FDA/NIOSH	Must adhere to current Quality System Regulation (QS regulation) - 21 CFR Part 820	NIOSH Docket Number 216, CDC-2013-0004	Meet or exceed respirator certification criteria.



首先，團隊使用 Minitab Workspace 當中的 VOC Summary 客戶之聲摘要表單和 Kano Model 工具，匯總與分析來自線上和面訪調查的資訊輸入。



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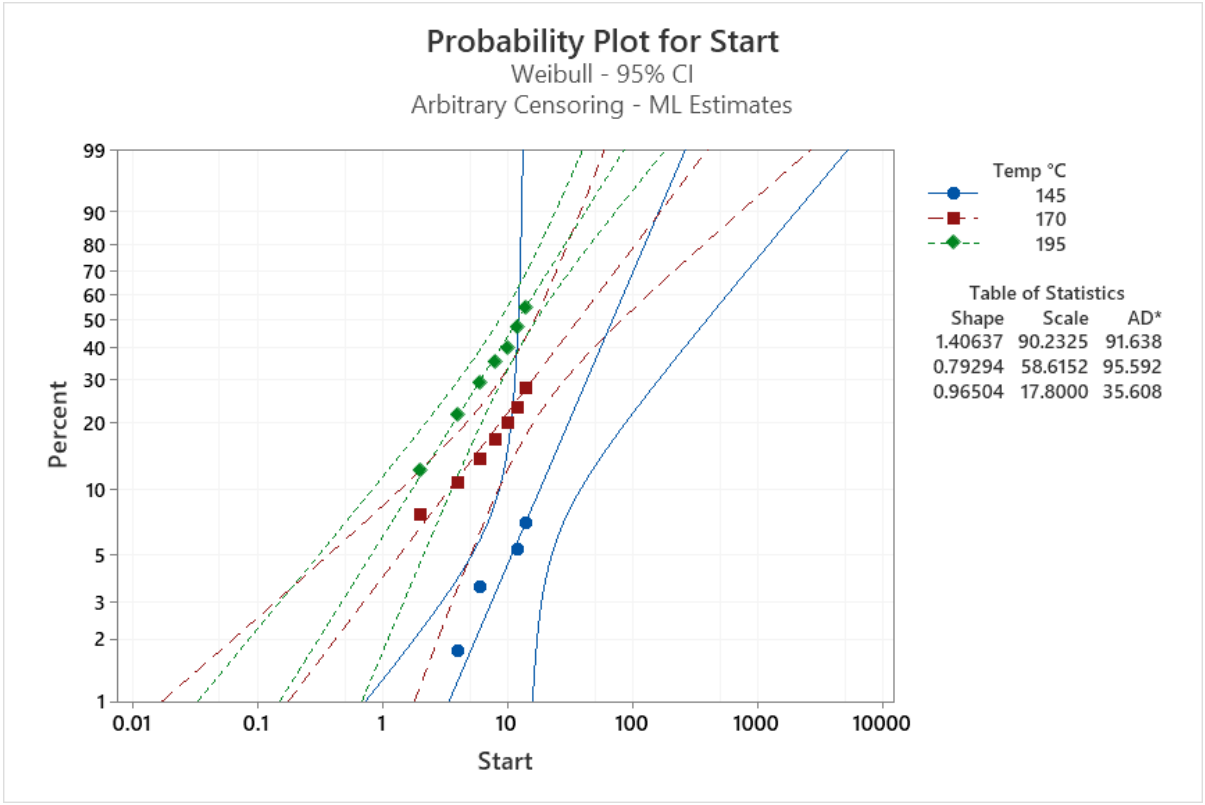

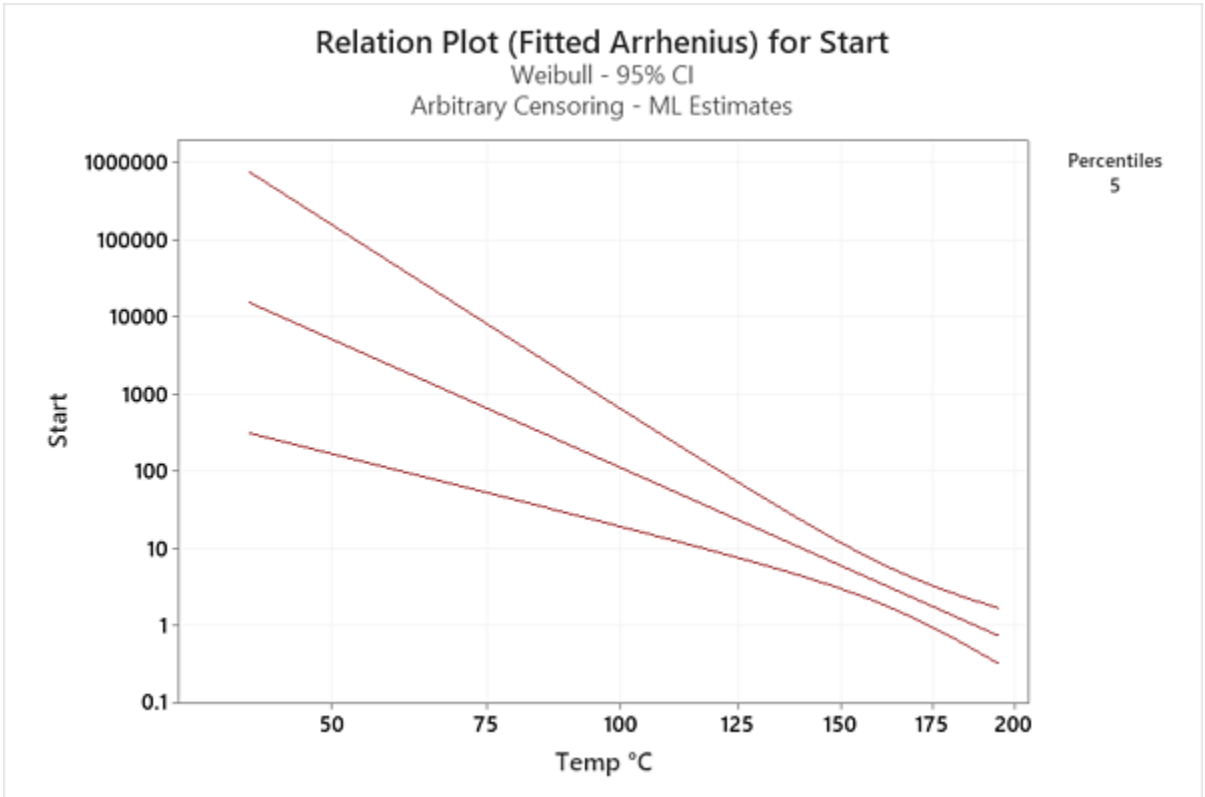

基於一些意見回饋，該團隊使用 3-D 列印技術來設計、製造和測試了原型。由於縮短了時間表，團隊使用 Minitab 統計軟體來執行加速壽命測試 (Accelerated Life Testing)，驗證了設計概念並進行了製程能力研究。

一起使用這些工具，該公司能夠在專案啟動後的 8 週內進行設計、測試和發表新產品。正確結合了 Minitab Workspace 創新工具與 Minitab 統計軟體數據分析功能，幫助他們保持專注並且能快速交付結果。一款舒適的新型口罩誕生並獲得了市場的高度認可，同時以可接受的價格符合政府法規，增長了公司 15% 年度獲利。

免費試用 Minitab 統計軟體 和 Minitab Workspace

下載 Minitab Workspace 試用

下載 Minitab 統計軟體試用

感謝 Minitab 解決方案架構師 Antonio Vargas 在此案例方面的研究和技術支援！

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