

Customer & Market Due Diligence Of Connectivity Solutions Provider: Establishing Chip-down And Disintermediation Risks To Modules And IoT Technology

The Challenge: Our client, a middle-market PE firm, was looking to invest in a leading full-service supplier of wireless and IoT connectivity solutions. While attracted by the target's extensive portfolio of premium wireless connectivity modules and IoT solutions for high-margin and fast-growing end-markets, our client was concerned about the risk of customers switching to the chip-down approach and the competitive threat from both low-cost suppliers and semiconductor companies. As such, our client asked Gotham to conduct a 2-week customer & market due diligence to establish the target's: (1) value proposition and competitive positioning; and (2) market opportunity and growth outlook.

Engineering And Purchasing Decision Assessment: To assess market and competitive dynamics, Gotham:

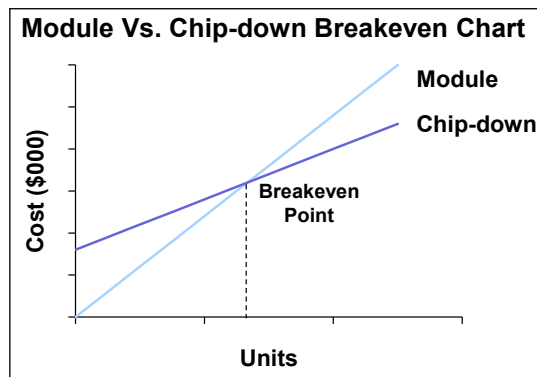
- Conducted anonymous interviews with customers, competitors, engineers, and suppliers to establish: wireless and IoT connectivity trends and growth drivers; the purchasing process and vendor selection criteria; chip-down decision criteria, the disintermediation risk from semiconductor manufacturers; and the target's reputation and competitive positioning relative to low-cost manufacturers and other full-service players
- Created a wireless connectivity module supplier competitive landscape that profiled key full-service, low-cost, and semiconductor players
- Built a detailed cost analysis of chip-down manufacturing and determined the volume breakeven point between module and chip-down manufacturing methods to assess the risk posed by chip-down approach
- Established the North America IoT market size by segment and developed an IoT sensor segment framework, identifying key applications and manufacturers.

Rapidly Growing Data Requirements Are Driving Demand For Advanced Wireless Connectivity Modules

Over the last decade, devices have become more complex and more reliant on transmitted data, fueling demand for more advanced connectivity solutions. Modules offer a convenient solution for low-volume customers to add connectivity to their devices without the need for costly chip-down integrations. Module units are primarily sold through a network of distributors, who act as the first line of the module manufacturer's sales/support capabilities. The target is one of 10 full-service, good-reputation module manufacturers (who constitute a ~75% collective market share), competing against 10 semiconductor players (~20% market share) and thousands of low-cost module manufacturers. Customers favor full-service players due to their ability to provide a wide variety of modules for different applications, such as the low-power and short-range Bluetooth Low Energy (BLE) for MRI machines and low-power wide-area technologies like LTE-M for farming.

Full-Service Module Suppliers Serve Clients Unlikely To Use Chip-Down Manufacturing And These Suppliers Face Limited Disintermediation Risk From Semiconductor Companies

The target's low-volume customer base is not able to transition to the chip-down approach due to the up-front cost. The chip-down approach of designing and integrating wireless connectivity chips onto the motherboard itself results in a device with a smaller profile and cost savings on a per-unit basis; however, volumes above 500K units are required to offset the significant up-front cost of using the chip-down approach. As regards disintermediation threat from semiconductor companies, chips/processors are a much higher volume business with greater ROIs, resulting in limited interest from semiconductor companies in pursuing the module business. Semiconductor companies only sell modules as test products to highlight and advertise their chips/processors, posing limited disintermediation risk to module manufacturers. On the other end, low-cost players are plagued by an unreliable supply chain that often misses schedule targets, a narrow portfolio of products, and product quality issues, preventing them from addressing the customer base of the target and the other full-service players as this customer base has low tolerance for quality failures (e.g., medical technologies) and for missed schedule targets.



IoT Solutions Market Is Large And Growing With Decreasing Costs Of Hardware And Improved Ability For Precision Tracking

Over the last decade, there has been an explosion of Internet of Things (IoT) devices with everything from toasters to industrial equipment gaining new smart features. IoT represents a ~\$550B market, with the number of global active IoT connections to grow at ~22% CAGR, and the highest IoT activity in the consumer electronics, transportation, and healthcare end-markets. As IoT devices look to add more features, there is high demand for further technological advancement of IoT connectivity solutions. Recent advancements have driven down the cost of hardware (e.g., sensors and tags) and opened new applications such as geo-tracking (finding the exact position of an object) in warehouse automation with the improvements in the precision tracking of sensors (down to 1 cm). These advancements make IoT connectivity solutions applicable in new use cases, driving the continued growth of the sector.

The Outcome: Gotham's fact-based assessment provided the client clarity on the target's competitive differentiation from low-cost suppliers within the wireless and IoT connectivity solutions market and the limited risks that the chip-down approach and disintermediation by semiconductor companies pose. Armed with this fact-based assessment, our client was able to make informed, confident decisions regarding the deal.