

TRENDS & IDEAS

LEVERAGING ECONOMIES OF SCALE WITH AUTOMATION AND ROBOTICS

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Given the modern day resurgence of robotics/automation demand, any notion that this theme remains "hype" is debunked, in CFRA's view, as recent robotics developments continue to push technological boundaries into reality. In order to properly determine the market size of the opportunity, CFRA employs a collective approach, including robotic unit orders, growth of individual industries, and potential labor cost savings, which all support a promising outlook. We take a closer look at select supply chain beneficiaries, which we think play crucial roles in end-to-end automation and can properly capitalize on current (and future) trends.

TAKEAWAY: Robotics and automation continue to establish integral roles in the IT supply chain. CFRA takes a closer look.		
POSITIVE IMPLICATIONS:		
Brooks Automation	★★★★★	[BRKS]
Flex Ltd	★★★★★	[FLEX]
Zebra Technologies' A'	★★★★★	[ZBRA]
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Manufacturing automation remains nothing new, first explored by George Charles Devol, when he introduced the first industrial robot, the Unimate, in 1954. The Unimate helped prompt the initial surge in robotic usage, which was accelerated by General Motors (GM 34 *****) in 1969 when the automaker overhauled its Lordstown, Ohio plant by implementing robots for spot welding. By the 1980s, the trend was in full motion, but growing pains soon set in, as financial and operational woes prompted a slowdown in American robotics. Consolidation followed after, as overseas companies (especially in Japan) ended up acquiring many robotic-related companies. Leaping forward to today, as corporations are faced with burgeoning labor costs, a rapidly shrinking workforce (retiring baby boomers), and the ever-growing possibility that the practice of offshoring jobs to lower-cost countries could be deterred by law or regulation, automation of work processes is again gaining interest.

Given the initial setbacks in the 1980s, CFRA thinks management with an interest in pursuing automation must keep a close eye on costs and maintain an overall prudent approach. Below, we examine hypothetical costs and potential returns when automation is properly implemented. According to Factory Automation Systems (a full service manufacturing company), and assuming an average \$250,000 initial installation (\$60,000 per robot), initial payback periods can occur as early as the first two to three years, while healthy cumulative cash flow (around \$2.0M) could be realistic longer term in year ten, as labor/productivity efficiencies start to greatly outpace maintenance/operating costs. To further put expenses in perspective, Deloitte reports labor cost savings could reach around 90% with robotic automation, far eclipsing outsourcing, which is currently earmarked at a 65% reduction of expenses. Of further interest, the International Federation of Robotics states that in the U.S., there are approximately 150 industrial robots for every 10,000 employed manufacturing workers, implying this trend could remain a key component in spurring economic growth.

In what seems to be a perpetual state of evolution, corporations continue to further leverage automation to retain competitiveness and create end-to-end seamless intelligence in machines. This will likely eventually set the stage for new technological advancements to take hold, such as Cyber Physical Systems (CPS), or structures that utilize algorithms and connectivity to integrate levels of manufacturing from sensors to equipment.

Simply put, all data points suggest widespread adoption continues to materialize. According to the Robotic Industries Association (RIA), 34,606 domestic robots (valued at \$1.9 billion) were ordered in 2016 alone, a 10% rise from 2015. Further, RIA noted a 61% hike in orders for assembly applications in 2016, while the Boston Consulting Group expects manufacturing automation functions to grow from 10% in 2015, to 25% by 2025. Stepping back and assessing the opportunity holistically, Allied Market Research (AMR) currently projects the robotics market will reach \$83 billion by 2020, and grow at a 10% CAGR. Further compartmentalizing into notable industries garnering attention, AMR sees industrial robots (\$24B market by 2025) and shipping/packaging robotics (\$31B by 2020) both comprising healthy portions of the overall

market.

We highlight three companies currently riding the coattails of secular automation trends, even as they carry out vastly different, yet integral jobs in the supply chain: Brooks Automation, offering robotic handling of wafer substrates; Flex, which offers electronic manufacturing services; and Zebra Technologies, with front-line retail and warehouse automation exposure.

Brooks Automation (BRKS 22 ****) provides automation/cryogenic solutions for the semiconductor and life sciences market. BRKS has enriched its portfolio offerings from solely robotic equipment for semiconductor wafers, to cryogenic vacuum equipment, contamination solutions for device cleaning and cold storage (BioStorage acquisition in November 2015). For FY 16 (Sep.), its Semiconductor Capital Equipment division contributed 80% of its revenue split, while Life Sciences added the other 20%. Given the scale and breadth of BRKS' newly aligned capabilities, we assert there are no direct competitors with a similar portfolio (other than item specific competitors in Life Sciences such as Liconic AG and Thermo Fisher). We see FY 17 as an inflection point for BRKS, as elevated demand to equip 3D NAND capacity additions and 10-nanometer fabs for foundry and logic should fully translate to solid revenue and earnings growth. Lastly, we note no outstanding debt and \$91M in cash on its balance sheet.

Flex Ltd. (FLEX 17 ****) is an electronics manufacturing service (EMS) company, currently shifting its portfolio away from traditional front-end EMS supply chain business (lower margin and limited lead time), to longer product life cycle and predictable businesses. FLEX has focused on a richer product mix, where automotive, medical, and industrial have grown from 19% of revenue in 2010, to 36% today, with line of sight to 45% longer term. Through its Sketch-to-Scale solutions (initial design to the store shelf), which now comprise 21% of revenues, it has landed key strategic relationships such as Nike (NKE 55 ****). Through this partnership, FLEX is helping revamp its supply chain of how it manufactures sneakers through a greater use of automation/robotics to hopefully increase yearly shoe shipments to 800M, from 550M longer term. We believe this lends material revenue contribution (\$700M by FY 18 and long term prospects of \$1B plus) for its Consumer Technologies Group (CTG) segment.

Zebra Technologies (ZBRA 92 ***) designs and manufactures Automatic Identification and Data Capture (AIDC) products including mobile computers, radio frequency identification (RFID) readers, barcode labelers and other automation products. ZBRA's products help augment productivity from warehouses to front-line retail. With devices such as its TC8000, and new TC51 release, ZBRA delivers infrastructure for active inventory management, reduction in pick up time, and acceptable product fulfillment. Currently, ZBRA thinks inventory accuracy hovers around 65%, but with RFID platforms, precision can be increased to as much as 95%. Given the increased level of automation, ZBRA also estimates labor reductions can come in by as much as 75% (10% lower costs), while the number of transactions could rise mid-single digits. While prospects remain favorable given the transition phase to digital (e.g. omni-channel) across its end markets, we still remain wary of its largest segment, retail, given recent weakness. Further, while we note free cash flow improvement (\$295M in 2016) on lower capex and EBITDA improvement, debt remains pronounced (\$2.7B or 4.0X EBITDA) from its \$3.5B Enterprise acquisition from Motorola in 2014. ZBRA aims to reduce leverage to 3.0X by 2018.

Potential risks to our outlook and thesis include the inability to properly scale costs for small- to medium-sized businesses, slowdown in economic growth, and new disruptive technologies requiring material capital intensity.

DAVID HOLT - CFRA Equity Analyst

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