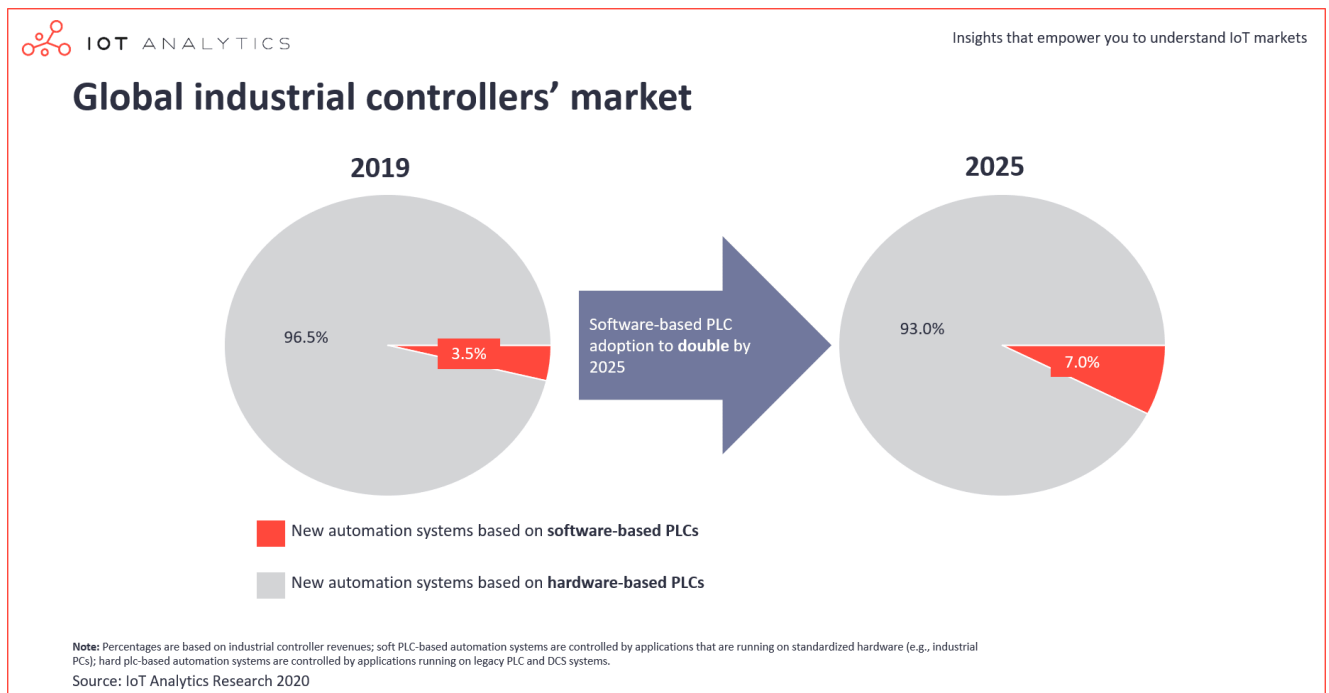


INSIGHTS RELEASE

Software-based PLC penetration to double by 2025

In short

- Software is increasingly replacing hardware in industrial environments
- Software-based controllers, today, are reliable, powerful and flexible.
- Soft PLC adoption is expected to double between 2019 and 2025, posing an “innovator’s dilemma” for incumbent industrial automation vendors such as Siemens, ABB, Rockwell Automation and Schneider Electric.
- Actions taken by incumbents will prevent significant disruption in the near-term, but the long-term threat of soft PLCs will remain



Hamburg/Germany, December 12, 2020: IoT Analytics, a leading provider of market insights and competitive intelligence for the Internet of Things (IoT) and Industry 4.0, conducted extensive primary and secondary research including 15 interviews with virtual PLC and soft PLC experts as well as end users, and found that the market penetration of Soft PLC’s is expected to double in the next 5 years. Soft PLC’s will then represent 7% of the overall industrial controllers market.

This is one of many findings of IoT Analytics' latest 100-page publication titled "Virtual PLC & Soft PLC Market Report 2020-2025" revealing the insights from the research conducted during April 2020 and October 2020.

The Global Industrial Controllers Market

Today, industrial control is largely managed by PLCs (programmable logic controllers), fondly called the industrial black box. It is hardwired to steer time critical processes such as motor control and valve control and operates based on a program written and fed by the user. Almost every manufacturing process today makes use of this technology which is supplied by industrial automation companies such as Siemens, Rockwell Automation, ABB, Schneider Electric and others.

Advances in virtualization technologies, real-time Linux operating systems and cheap but powerful edge computers are allowing companies to replace these "industrial black boxes" with software-based PLCs (soft PLCs) running on standardized hardware such as industrial PCs. Adoption of these soft PLCs represents a dramatic shift in automation deployments.





Commenting on the possible disruptive effects the new technology Knud Lasse Lueth, CEO at IoT Analytics, reveals: "Since today's soft PLCs are dramatically more reliable, powerful and flexible than the PC-based systems of the past, they can pose a real threat to beloved "black boxes" by creating a classic "Innovator's Dilemma*" for incumbent "hard PLC" vendors. Soft PLCs initially addressed the needs of new / lower end customers by providing more flexible, non-deterministic control solutions often at a fraction of the cost of similar hard PLCs but since entering the market in the 90's, they have rapidly become more performant and will continue to do so."

Infamous examples of an "innovators dilemma" are companies like Kodak, a once successful company which went from totally dominating its space to going bankrupt due to digital disruption. Looking at the industrial PLC market, the success that Beckhoff (a vendor that leverages soft PLC technology) has had relative to a leading "hard PLC" vendor, Rockwell Automation, is remarkable. Beckhoff sales have increased at a CAGR of ~15% since 2000 vs. Rockwell Automation's Factory Automation business unit's 3% CAGR over the same time period.

Matthew Wopata, principal analyst at IoT Analytics, further elaborates "Our market analysis shows that incumbent vendors are not blind to the disruptive threat that soft PLCs pose to their hard PLC businesses. As the table below shows, major incumbent automation vendors have soft PLC offerings, many of which are from acquisitions that have occurred within the past 5 years:

Vendor deep-dive: Rockwell, Schneider, ABB and Siemens

Offering:

Incumbent vendor:	Offering:		
	1 Hard PLCs	2 Soft PLCs	
		2a Hardware specific soft PLCs	2b Hardware agnostic soft PLCs
 ABB	✓	✓ via B&R Automation (2017)	✗
 Rockwell Automation	✓	✓ via ASEM (2020)	✓ via ISaGRAF (2007)
 Schneider Electric	✓	✓ Harmony IPCs ✓ Think & Do / Steeplechase / Entivity (2001)	✓ via NXTcontrol (2017)
 Siemens	✓	✓ SIMATIC PC-based systems	✗

✓ = vendors offers product ✓ = vendors offers partial product (e.g., IPCs without soft PLC) ✗ = vendor does not offer product

Source: IoT Analytics Research 2020

Future outlook

Due to the slow pace of adoption and risk adverse nature of industrial end users, IoT Analytics summarizes however, that is not likely that incumbent vendors face an imminent threat of being majorly disrupted by soft PLCs. Even though soft PLCs will likely meet or exceed certain hard PLC performance characteristics within the next 5 years, they will still have an enormous obstacle to overcome in the form of decision makers who are comfortable with the existing hard PLCs and are resistant to change. Another often overlooked but very important factor is the human resources in the factory - no matter how performant a particular technology is, if employees do not know how to use it, it cannot unfold its potential. .

An innovator’s dilemma occurs when an incumbent business is disrupted by new technology. When the disruptive technology emerges, incumbent companies are faced with the “innovator’s dilemma” which is to either serve existing / high end customers by making sustaining improvements to existing products or to serve new / lower end customers by developing offerings built leveraging the disruptive technologies.

MORE INFORMATION AND FURTHER READING

<https://iot-analytics.com/soft-plc-industrial-innovators-dilemma/>

FOR FURTHER INQUIRIES

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