

Impact of IIoT on the refinery pump market

In 2018, refineries will spend USD \$3.2 billion for pumps¹. They will also spend USD \$23.9 billion for guide, control and measure which are the building blocks for IIoT (Industrial Internet of Things)². Some suppliers just provide pumps. Others provide multiple components plus guide, control and measure products. Those pump suppliers who have weak IIoT programs will be likely to lose market share to those with strong IIoT programs.

By Robert McIlvaine, President & Founder, The McIlvaine Company

Guide includes the software for process management, data analytics and the input of subject matter experts. Presently, 80% of guide revenues are captured by software companies, consultants and suppliers of miscellaneous products and services. 2.5% are captured by suppliers of pumps. Some pump companies have a range of consulting, condition monitoring and other “guide” services. The guide segment will be growing at 10% per year. Pump sales will increase at 4% per year.

Refining guide revenues in 2028 will be close to USD \$17 billion. Pump companies could capture guide revenues of between USD \$330 million and USD \$660 million depending on their success in leveraging IIoT. These revenues are significant. They also affect market share for the pumps. Let’s say X pump company has a present market share of 5% or sales of USD \$160 million. In addition, X has guide sales of USD \$7.5 million. If in the next 10 years guide sales only increase to USD \$12 million, it is likely that X company will lose market share.

In this case, the market share drops to 3% with weak IIoT but would increase to 7% with strong IIoT. Total revenues for the company in 2028 with weak IIoT are USD \$152 million. With strong IIoT the revenues are USD \$376 million. There are also major differences in profits. The company with strong IIoT is likely to have twice the profit

Refinery Purchases 2018

Product	\$ millions
Pumps	3200
Guide	5877
Control	12,400
Measure	5600
Sub total	23,877
Total	27,077

margins as the company with weak IIoT. So total profits are five times higher by taking the strong IIoT route.

The industrial internet of things will greatly increase opportunities but also threats to pump suppliers. The opportunities include larger markets and higher margins. The threats include the insertion of third parties between the supplier and his traditional customers. The process management system supplier will share profits with the pump suppliers based on the application and product knowledge each has. Suppliers who leverage the Industrial Internet of Wisdom (IIoW) to empower IIoT will be the beneficiaries. Leveraging will require new approaches.

Pump and Pump-Guide Sales in 2018 and 2028 - \$ millions

	All Companies	Supplier X 2018	All Companies 2028	Supplier X Weak IIoT 2028	Supplier X Strong IIoT 2028
Pumps	3200	160	4,800	144	336
Guide-Pump	150	7.5	330-660	12	40
Total Revenue	3350	447	5130-5460	152	376



New Approaches to Succeed in the IIoT World

Subject	Old Approach	New Approach
Market Research	Top down periodic general guesstimates	Bottoms up forecasts with detailed continuously updated analyses
Sales Initiation	Uncoordinated sales leads	Identification and pursuit of large prospects
Sales Persuasion	Sales experts	Application experts
Selection Criteria	Price and service	Total cost of ownership (TCO) and service
Location of Specifiers	Individual plants	Corporate staff with TCO data
Acceptance of New and Better Products	Slow	Rapid
Collaboration with Other Suppliers	Haphazard	Important to success
Decision Process	Not systematic	Decision systems
Subject Matter Experts (SMES)	Lots of SMES but not well utilized	Subject Matter Ultra Experts (SMUES) contributing to and improving decision systems
Remote Monitoring	Unusual	Prevalent
Data Analytics	Unusual	Prevalent
TCO Analyses	Expensive and inadequate	Voluminous and continuous
Third Party Operation	Minor	Major
Component Supplier Role	Initial sale, spare parts, service on demand	Cloud based continuous involvement

Refinery Purchases 2018 - \$ millions

	Total	LUKOIL	Aramco	SK	Repsol	Exxon
%		1.27	2.53	0.85	1.15	5.87
Pumps	3200	41	81	27	37	188
Guide	5877	75	149	50	68	345
Control	12,400	157	314	105	143	728
Measure	5600	71	142	48	64	329
Sub total	23,877	303	605	203	275	1402
Total	27,077	344	686	230	312	1590

The strong IIoT approach involves identification of the top 200 refineries which account for most purchases. The top 22 refineries purchase more than 50% of all the pumps. They range in size from Exxon Mobil with nearly 6% of all purchases to refineries with just a fractional percent of the total.

Pump suppliers should be pro-active and initiate a strong IIoT program starting with the introduction of new approaches. The result can be profits ten years from now which are five times higher than they would be without the program.

References

- (1) Pumps: World Markets, the Mcllvaine Company.
- (2) IIoT and Remote O&M, the Mcllvaine Company.



About the Author

Robert Mcllvaine is the President and Founder of The Mcllvaine Company, which publishes reports across worldwide pump and valve markets. He

was a pollution control company executive prior to 1974, when he founded The Mcllvaine Company. He oversees a staff of 30 people in the USA and China.

