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Customer satisfaction by industry

	"Very satisfied"
Overall Study	37.6%
Manufacturing industries	
Pulp, Paper	52.4%
Instrumentation, measurement, control systems	50.4%
Chemical	44.6%
Pharmaceutical	43.1%
Fabricated metals	42.5%
Other manufacturing processes	41.1%
Engine, turbine, mechanical	38.5%
Food, beverage	38.3%
Other transportation equipment manufacturing	34.1%
Transportation services	33.3%
Industrial, commercial, agricultural, other machinery	32.0%
Other electronic products, equipment	31.4%
Electronic components	29.2%
Computers, communication equipment	28.6%
Aircraft, aerospace	27.3%
Petroleum refining	26.9%
Plastics, rubber	26.7%
Primary metals	22.7%
Non-manufacturing industries	
Mining*	75%*
Scientific, research services	66.0%
Information, data processing, software services	45.8%
Other non-manufacturing	44.4%
System engineering, integration, architectural services	33.0%
Utilities	32.2%
Construction services	29.0%
Government, military	10.8%

*Small sample size

Source: Control Engineering

Higher satisfaction than overall

Lower satisfaction than overall

In Search of Satisfaction

See what drives satisfaction in 12 product categories. New research results give users criteria for evaluating their suppliers, and suppliers information for improving customer satisfaction.

Renee Robbins, *Control Engineering*

During the month of May 2007, *Control Engineering* magazine gave its print and online subscribers a chance to talk about satisfaction. Specifically, we asked readers to rate their satisfaction with vendors and their products in 12 categories: DCS software; networking hardware; industrial computers; single- and multi-loop controllers; embedded hardware; historian software; linear motors; process analyzers; servo motors; alarm, annunciator, and message panels; DAQ hardware and software; and torque sensors and similar feedback devices.

We had two goals for this research, which was conducted by Reed Research Group: identify the key factors that drive customer satisfaction in the automation, instrumentation and controls marketplace, and identify vendors within product categories that are doing a particularly good job satisfying their customers. The research builds on similar studies we have conducted every year since 2004 (previous years covered other product categories and used slightly different methods).

The results give users some criteria for evaluating suppliers before or after a purchase, and give suppliers information for improving customer satisfaction. We broke out the results by industry so we could tell, for example, if engineers in petroleum refining are more or less satisfied than those in food and beverage manufacturing with the products they buy and the vendors they choose. We also broke out data by product category to learn if users of single- and multi-loop controllers are more or less satisfied than users of DAQ hardware and software.

Lastly, we used the research to develop a list of vendors who, according to our respondents, have a high percentage of satisfied customers for a given product category. (You can find them on page CS4 and identify them by the "Customer Satisfaction Award" logo in their ads.) Users and vendors also can find the full results of the research online.

The 2007 Customer Satisfaction survey asked respondents to choose up to three product categories in which to evaluate vendors. By the end of May, almost 600 of you had provided your opinions, creating a total of approximately 1,600 evaluations, according to Mark DiVito,

research director. "Taken as a whole, 37.6% of respondents report being "very satisfied" with their vendors in the product categories studied," said DiVito. "Another 55.8% said they were 'somewhat satisfied.' But individual results

vary widely by industry."

Users in the pulp and paper industry report the highest percentage of very satisfied users (52.4%), followed closely by users in the instrumentation, measurement and control systems industry (50.4%). Only 32.2% of users at utility companies, on the other hand, reported being very satisfied. Petroleum refining, plastics/rubber and primary metals also show a low level of customer satisfaction (26.9%, 26.7%, and 22.7%, respectively). The chart on this page shows results for other industries.

Satisfaction with instrumentation

The 2007 edition of the customer satisfaction survey sponsored by the Measurement, Control & Automation Association (MCAA), released in February, provides its own data on the satisfaction of buyers, users and distributors of instrumentation. PeriscopeIQ, a Bethlehem, PA, market research consultant, surveyed more than 3,600 customers in this fourth annual survey for MCAA.

On a five point scale from excellent to poor, the survey revealed that MCAA member companies are very good or excellent in the areas of quality of products (81% of respondents), value of products and services (74%), and product design (76%). MCAA companies had slightly lower rates of satisfaction for services, including customer service (69% choosing very good or excellent),

technical support (68%), availability of spare parts (54%), repairs (50%) and customer training (51%).

"From an overall perspective, 66% of customers found the reputations of MCAA member companies to be very good or excellent," said MCAA executive director, Cynthia Esher. "They rated these companies very good or excellent 71% of the time and over 95% would be somewhat or very likely to recommend them, and somewhat or very likely to purchase from them again in the future."

MCAA is the national trade association for manufacturers and distributors of instrumentation, systems and software used in industrial process control and factory automation worldwide. For a list of member companies or more information on the survey, visit www.measure.org.

Components of satisfaction

In an effort to help raise the level of customer satisfaction in all industries, we also asked for more detail about 15 areas or activities that have been known to influence customer satisfaction. These components of satisfaction are: customer service, customer training, ease of installation, hardware repair services and/or software bug fixes, legacy product support, price, product availability, product design, quality of products and services, sales ordering process, sales staff knowledge and attitude, software upgrades, technical support services, value of products and services, and Website usefulness.

Not surprisingly, not all 15 areas equally influence overall satisfaction. "Survey results show six areas stand out as key drivers of satisfaction

Customer satisfaction by product category

	Overall satisfaction	Alarm, annunciator, message panels	DAQ hardware, software	DCS software	Linear motors	Embedded hardware
Number of responses	1623	156	281	111	83	59
Percent "very satisfied" overall	37.6%	41.0%	40.6%	36.0%	26.5%	47.5%
High impact areas						
Quality of products and services	50.7%	51.3%	54.6%	44.4%	43.4%	59.3%
Customer service	33.9%	37.5%	32.0%	31.8%	27.7%	34.5%
Price	22.9%	26.0%	19.8%	31.8%	18.1%	32.2%
Software upgrades	26.7%	29.0%	32.1%	26.0%	23.7%	28.0%
Product availability	36.4%	40.3%	42.3%	34.3%	25.3%	40.7%
Product design	40.7%	39.9%	40.6%	39.8%	38.6%	50.0%

Customer Satisfaction Survey

for our respondents," says DiVito. "Customers care most about these high-impact areas, and a high satisfaction score for one of these can mean a high overall feeling of satisfaction with a vendor and its product."

The top six drivers of satisfaction in our survey, and their percentage of "very satisfied" respondents, are: quality of products and services 50.7%, product design 40.7%, product availability 36.4%, customer service 33.9%, software upgrades 26.7%, and price 22.9%.

A little more than half of respondents were very satisfied with what they perceive as the quality of products and services they receive from the various manufacturers evaluated. However, only 22.9% were satisfied with the price they received. Customer service, product design, product availability, and software upgrades fell in between these two extremes in terms of affecting overall customer satisfaction. What this means is that users may want to look beyond price to evaluate customer service and software upgrade policies before they commit to simply a lowest-price purchase. Buying on price alone does not result in high satisfaction over the long term.

While these results may seem intuitive, it may be more interesting to look at the areas that have less influence on satisfaction. Value of products and services, ease of installation, and technical service support are slightly less

important (resulting in 40.5%, 40.1% and 36.3% highly satisfied, respectively). "We consider these to have moderate impact on overall satisfaction," said DiVito.

Areas with the least affect on satisfaction (and the percent of respondents who considered themselves highly satisfied overall) include: sales staff knowledge and attitude 36.5%, sales ordering process 31.5%, Website usefulness 30.2%, hardware repair services 27.2%, legacy product support 27.1% customer training 26.1%, and product group differences.

The products covered in our survey are very diverse, with only some, for example, requiring a long sales cycle and extensive sales staff knowledge to choose and configure. The "Customer satisfaction by product category" chart shows how the six primary drivers of satisfaction change by product purchased.

For example, overall satisfaction with historian software was 28.9% (compared to 37.6% overall). According to DiVito, this difference was mainly driven by lower performance across five of six high impact areas: Quality of products and services, customer service overall, price, software upgrades, and product design were all notably lower versus overall averages. Overall satisfaction for industrial computers was 29.5%—from lower performance in the areas of quality of products and services, price, and product design. Users of industrial com-

Historian software	Process analyzers	Industrial computers	Servo motors	Single-, multi-loop controllers	Networking hardware	Torque sensors, other feedback devices
41	106	173	270	119	158	66
28.9%	41.5%	29.5%	31.9%	45.4%	44.9%	39.4%
35.9%	62.3%	39.8%	47.4%	55.9%	58.0%	49.2%
23.1%	43.7%	25.1%	35.0%	35.4%	39.3%	38.7%
5.4%	28.4%	18.2%	21.3%	31.6%	33.3%	15.4%
17.1%	24.3%	17.7%	27.0%	28.6%	27.9%	28.2%
28.9%	35.6%	26.7%	33.7%	41.4%	45.3%	28.6%
30.0%	43.8%	27.1%	38.6%	49.6%	51.6%	43.1%

Statistically higher satisfaction than overall

Statistically lower satisfaction than overall

Source: Control Engineering

Customer Satisfaction Survey

puters, linear motors and servo motors showed statistically lower satisfaction than overall.

The highest rate of satisfaction for quality of products and services (62.3%) was reported by users of process analyzers. This was one of six categories with half or more of respondents highly satisfied with product quality. Networking hardware was the leader for product availability, with 45.3% highly satisfied, as well as product design (51.6% highly satisfied). Vendors of DAQ hardware and software can say

32.1% of respondents are highly satisfied with software upgrades, the highest rate for that measure.

Response rates varied by product category. Those with the largest response rates were DAQ hardware and software (281 responses), servo motors (270 responses), and industrial computers (171 responses). Categories with the fewest responses include historian software (41 responses), embedded hardware (59 responses), and torque sensors (66 responses). Satisfaction ratings for categories with low rates of response are statistically valid, but low response rates may result in skewed vendor satisfaction ratings, simply because of too few data points, said DiVito.

Advice to vendors

From a vendor standpoint, while items with lower satisfaction levels on low impact areas do not necessarily have to be fixed immediately, they do need to be monitored. Pay particular attention to areas that can create friction and create negative impressions about your company. These items, while not critical, can have a halo effect and negatively impact even positive ratings over the course of time.

Vendors can use the research results as one indication of where to focus improvement efforts, said DiVito. Areas with high impact and low satisfaction results should be addressed first. "Fix these areas first—price, software upgrades and customer service—because they have the greatest opportunity to impact customer experiences," he said.

DiVito said areas with high impact and high satisfaction ratings should be viewed as leverage opportunities to differentiate against competition. Areas with low impact and low satisfaction ratings should be monitored.

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ONLINE:

www.controleng.com/archive, July 2007, contains at the bottom of this article:

- More vendor advice.
- Chance for feedback. Please post thoughts in the Talk Back section.
- Resource Center has full survey results at resource.controleng.com.



Customer satisfaction awards

Vendors with 80% or more satisfied responses, by product category

1. Alarm, annunciator, message panels (156 responses)	93%	7. Industrial computers (173 responses)	90%
• Cutler Hammer	100%	• Siemens	95%
• Rockwell Automation	92%	• GE Fanuc	89%
• Honeywell	89%	• Advantech	88%
• Siemens	82%	• Rockwell Automation	84%
2. DAQ hardware, software (281 responses)	95%	8. Servo motors (270 responses)	94%
• Rockwell Automation	97%	• Yaskawa Electric	97%
• National Instruments	96%	• Baldor Electric	96%
• Siemens	96%	• Bosch Rexroth (Indramat)	96%
• Honeywell	94%	• Rockwell Automation	94%
3. DCS software (111 responses)	86%	• Siemens	93%
• Emerson Process Management	92%	9. Single-, multi-loop controllers (119 responses)	93%
• Rockwell Automation	91%	• Emerson Process Management	100%
• Honeywell	88%	• Red Lion	100%
4. Linear motors, related controls (83 responses)	94%	• Watlow	100%
• Rockwell Automation	94%	• Yokogawa	91%
• Schneider Electric	90%	• Honeywell	89%
5. Embedded hardware (59 responses)	95%	• Rockwell Automation	80%
• Intel	100%	10. Networking hardware (158 responses)	96%
6. Process analyzers (106 responses)	95%	• Phoenix Contact	100%
• ABB	100%	• Siemens	100%
• Invensys (Foxboro)	100%	• Hirschmann Network Systems	100%
• Yokogawa	100%	• Belden Wire & Cable	94%
• Emerson Process Management (Rosemount)	97%	• Moxa	90%
• Mettler-Toledo	92%		

Source: Control Engineering