

## **Maxims: The competition never sleeps**

It is a basic principle of tactical awareness that the competition never sleeps. You must assume that they are always trying to find areas of competitive advantage and working to reverse any areas of competitive disadvantage. During the eighties, the ascent of Japan's semiconductor equipment industry was accompanied by high customer satisfaction with their tools and general dissatisfaction with tools made by western suppliers. The differences were significant enough that Japanese suppliers could command premium prices for their products. Western companies first responded with denial. The ones who survived were companies that took the quality difference seriously. This was aided by Sematech's wakeup call in the late eighties.

The next responses of Western companies were to approach the quality problems in a cold mathematical way, beating the reliability problem areas out of the tools. Next they focused on tool productivity. Then they copied the Japanese relationship-based selling approach and finally developed this into a more collaborative partnering model.

In doing so, they passed those Japanese companies that were not adapting fast enough. This year's Customer Satisfaction Survey unveiled that the service and support models for many Japanese companies have finally been passed by the models of leading suppliers in West. The problem was most clear for wafer fab suppliers in the 2012 'THE BEST' rankings, which identify the highest-rated suppliers of Wafer Processing, Test, and Assembly Equipment.



## THE BEST SUPPLIERS OF 2012

LARGE SUPPLIERS OF WAFER PROCESSING EQUIPMENT		Rating
1	Novellus	8.95
2	ASML	8.07
3	Applied Materials	8.02
4	Tokyo Electron	7.74
5	Hitachi Kokusai Electric	7.58
6	Nikon Corporation	7.48
7	Hitachi High-Technologies	7.27
8	Lam Research	7.16

Source: VLSIresearch

SMALL SUPPLIERS OF WAFER PROCESSING EQUIPMENT		Rating
1	Oerlikon	8.19
2	Plasma-Therm	8.18
3	EV Group	8.14
4	Nanometrics	8.10
5	Agilent Technologies	7.60
6	SUSS MicroTec	7.35
7	Canon	7.12
8	Mattson Technology	7.05
9	Axcelis	7.00

Source: VLSIresearch

SUPPLIERS OF TEST EQUIPMENT		Rating
1	Advantest	8.37
2	Teradyne	8.35
3	LTX - Credence	8.14
4	Tokyo Electron	8.07
5	ACCRETECH - Tokyo Seimitsu	7.63
6	Delta Design	7.62
7	Seiko Epson	7.56
8	Multitest	7.12

Source: VLSIresearch

SUPPLIERS OF ASSEMBLY EQUIPMENT		Rating
1	Hitachi High-Technologies	9.05
2	F&K Delvotec	8.51
3	Kulicke & Soffa	7.70
4	ASM International	7.61

Source: VLSIresearch

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In test, Advantest proved that even the merger with Verigy had not detracted them from their customers. In assembly, Hitachi Hi-Tech came through with a rating above 9.

But in wafer fab equipment only one company made it into this year's THE BEST rankings for small suppliers and for large suppliers only half the companies were Japan based. Worse they were led by three of the top western companies. What was really impressive was the degree to which Applied Material's SSG division levered their new collaborative approaches to launch them into higher customer satisfaction positions over the past two years. Meanwhile, Novellus made its fourth appearance in first place, while ASML jumped from 4th place to 2nd with an average rating of 8.07. Not surprisingly, ASML's consistent high ratings have correlated to their systematic rise in market share. They are the only European company in history to hold the crown of 'world's largest Semiconductor Equipment Producer'.

Consequently, these trends mark a point where many of Japan's equipment companies need to pivot from to avoid market share **erosion**.

***Maxim: “an expression of a general principle.” – Webster’s Dictionary***

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