

Frost & Sullivan Award for Market Leadership



AWARD DESCRIPTION

The Frost & Sullivan Award for Market Leadership is given to the company that has exhibited market share leadership through the implementation of market strategy. The recipient has displayed excellence in all areas of the market leadership process, including the identification of market challenges, drivers and restraints, as well as strategy development and methods of addressing these market dynamics. Furthermore, the award recipient has continually demonstrated solutions for monitoring market changes and for implementing superior market strategies. By utilizing these strategies for success, the company has established itself as the market share leader in its respective industry.

RESEARCH METHODOLOGY

To choose the recipient of this award, the analysts track competitor revenue and market share within the industry. This is achieved through interviews with all market participants and extensive secondary research of proprietary data sources. Finally, the competitors are compared and ranked for relative position. Frost & Sullivan then presents the award to the company that received the number one industry rank.

MEASUREMENT CRITERIA

In addition to the methodology described above, there are specific criteria used to ascertain final competitor ranking in this industry. The recipient has excelled by substantially increasing one or more of the following criteria:

- Market share
- Technology leadership
- Customer value enhancement
- Market strategy leadership
- Market and technology innovation

AWARD RECIPIENT: SUN MICROSYSTEMS

In the last few years, Java Card™ technology has gained the smart card industry's confidence, more than any other platform before it. The success of Java Card technology is most visible from the fact that the platform has grown in all the three key application markets for smart cards, namely telecom, banking, and ID applications. It is to recognize this all round growth of Java Card technology that Frost & Sullivan presents the Market Leadership Award for the year 2004 to Sun Microsystems.



The Java Card platform was introduced by Sun Microsystems in 1996. The Java Card Forum, officially launched in April 1997, drives Java Card technology development and makes recommendations on its specifications. Featuring representation from most of the leading smart card manufacturers, the primary purpose of the Forum is to promote Java as the preferred programming language for multiple application smart cards. Apart from smart card manufacturers, the Forum also includes organizations like VISA and Citibank and chip manufacturers like Infineon and Renesas.

Market Share Leadership

Over 550 million smart cards based on the Java Card platform have been shipped since 1997. With units shipments for 2003 estimated at 220 million cards, Java Card technology is way ahead as the market leader in the open platform market. Java Card technology's growth has been substantial in the three key smart card markets - Telecom, Government and ID, and Banking.

Java Card technology is a market leader in the GSM market in the high-end SIM card segment. It is the single largest platform in this segment and is driving the adoption and growth of mobile commerce and 3G systems worldwide.

The US Department of Defense (DOD) common access card (CAC) program was a prominent success story for Java Card technology in the Government ID market. The project involves highly stringent security specifications and mandates FIPS - 140 - 2 certification for the security of the card solution. The successful rollout of this project strongly endorses the credibility of Java Card technology in this market segment. The platform has also been chosen for employee ID projects by other U.S. federal organizations like the Departments of Homeland Security, Treasury, Interior, and NASA (National Aeronautics and Space Administration).

Java Card technology is also the preferred platform in the 22 million Taiwan healthcare ID Card project and in the citizen ID projects of Belgium, Macau, United Arab Emirates, and many others.

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Banco do Brasil, Latin America's largest bank, became the first to rollout EMV smart cards based on Java Card technology in the Latin American region. This is indicative of the growing prominence of Java Card technology in the banking segment, which has not been a strong market for it in the past.

Technology Leadership

Sun Microsystems has always shown tremendous pro-activeness in understanding the precise needs of the market and enabling the Java Card technology to deliver the same, through their highly successful R&D process.

The 'Java Card Protection Profile', which reduces the time and complexity to complete security evaluations under the Common Criteria, received final certification from La Direction Centrale de la Sécurité des Systèmes d'Information (DCSSI), one of the most widely respected Common Criteria certification bodies. This positions Java Card as a technology that is certified for its security features at a very high level. Numerous licensees have also successfully evaluated the technology at the EAL 4 plus levels and above.

Sun Microsystems announced the launch of the Java Card 2.2.1 specification recently. One of the primary aspects of this version will be the support for elliptic curve that will help enhance security in the contactless card scenario.

The version also features support for logical channels, which will be most relevant in the GSM market. It will enable parallel execution of multiple transactions on the mobile phone. This development will enhance Java Card technology's position as a market leader in the high-end SIM card market.

End-user Value Enhancement

The biggest stumbling block for open platforms in the smart card market has been cost ineffectiveness as compared to native platforms of the card manufacturers. However, Sun Microsystems has addressed this issue effectively by launching the 'Java Card S' program.

The 'Java Card S' program allows licensees to develop single and fixed function application cards in Java instead of native platforms, which has been the case till now. The program allows them to use smaller memory footprints, which will run on smaller silicon. Also, the royalty schedule from Sun Microsystems will be lower for this program than the standard ones from the organization. This allows these applications to be developed in Java at



a lower cost. It will enable end-users to use the popular Java Card platform even for their single/fixed function card applications. These cards will be interoperable with the multi application cards that the organization might launch at a later date.

The program is expected to bring the cost barrier down for organizations to develop Java Card technology based applications.

Market Strategy Leadership

Java as a computing platform has gained the trust of the IT community and is fast growing in popularity as the preferred computing environment. Sun Microsystems has been consistent in capitalizing on this development to promote Java Card technology. This enables the company's licensees to provide its customers not just with a smart card solution, but also an integrated larger solution to their authentication needs.

The company is currently working on a program that will simplify the integration of the card system with the computing environment being used. This will involve interoperability of the card platform with different computing environments and will also eliminate the integration overhead from the shoulders of the end-user.

This will be strategic masterstroke by Sun Microsystems that will enable it to move closer to the overall leadership of the world smart card platforms market.

For further information, contact:

Sun Microsystems
(408) 404.8929
www.sun.com

Frost & Sullivan
(210)247.2417
www.frost.com