

F R O S T & S U L L I V A N

BEST PRACTICES AWARDS

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2020
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A W A R D



Entrust Datacard®

2020 GLOBAL TLS CERTIFICATE
CUSTOMER VALUE LEADERSHIP AWARD

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Background and Company Performance

Industry Challenges

Digital trust is falling among consumers; many individuals are wary of doing business with companies that do not value the security of their personal data.

Globally, there are 4.42 billion Internet users¹, translating to 58.8% of the total population. Yet, according to a 10 nation Frost & Sullivan survey conducted among 990 consumers, a staggering 86% of digital consumers state that they are cautious about sharing their personal data over the Internet.

The move towards an encrypted web began in 1995 with the launch of Secure Socket Layer (SSL) certificates, which have now been replaced by the more secure version, Transport Layer Security (TLS) certificates. TLS certificates provide an easy way to build trust at a digital consumer's first touchpoint – the website.

With validation from Certificate Authorities (CAs), a business can install a TLS certificate to prove its identity to consumers and assure encrypted communication of consumer data. Based on Frost & Sullivan estimates, the number of certificates issued has increased from a mere 9.5 million in 2015 to 28 million in 2019, representing a 30.9% compound annual growth rate (CAGR). Today, about 58.8% of websites use HTTPS protocol².

The growing complexity of the threat landscape and the need for multiple certificates per enterprise have contributed to the rapid growth in demand for TLS certificates. Further, companies use TLS certificates to secure their private domains and connected devices in addition to public-facing website domains.

Today, an enterprise may use hundreds or thousands of certificates, depending on business size. Managing the certificate lifecycle becomes a significant challenge as the number of certificates grow. Consequently, businesses often have limited visibility of certificates, keys, renewal/expiry dates, and more. This not only inflates cost but also poses a serious risk to the security posture and brand reputation of the company.

Apple recently announced that they are changing their trust policy for TLS/SSL certificates. The new policy which is planned to take effect as of September 1, 2020 reduces the certificate lifetime to 398-days, which is a sharp reduction to current validity periods of 825-days (roughly two years, three months), necessitating more frequent renewals. With shortages across the cybersecurity workforce and prevalence of manual certificate requests and renewals, businesses often find it hard to keep pace with the scale of certificate management. While it is not hard to obtain a certificate, subsequent processes such as ensuring that they are up-to-date, managing certificate expirations, assigning roles to security team members, and maintaining certificate inventory require considerable time and resources.

¹Internet World Stats - <https://www.internetworldstats.com/stats.htm>

² <https://w3techs.com/technologies/details/ce-httpsdefault>

Automation and managed services are concepts that businesses increasingly embrace as they seek to improve their security posture. However, these concepts are less popular in the TLS certificate market. Reducing the time and resources a business invests for certificate management is a critical need that CAs must address.

Customer Impact and Business Impact

Entrust Datacard, founded in 1969, offers trusted identity and secure transaction technologies. The company's solutions range from the physical world of financial cards, passports, and ID cards, to the digital realm of authentication, certificates, and secure communications. Entrust Datacard is a certificate authority offering a broad portfolio of high assurance TLS/SSL certificates such as organization-validated (OV) and Extended Validation (EV) certificates. As a high assurance CA, Entrust Datacard focuses on the medium, large and very large enterprise segments.

Feature-rich Product Portfolio

As companies increase their digital sophistication and establish a higher level of public and private trust, Entrust Datacard Certificate Solutions provides a robust trust infrastructure model that helps manage risk and protect people, systems, and things. A comprehensive portfolio of products and services, as listed below, helps organizations seamlessly transition to cloud and hybrid IT ecosystems, manage trusted identities, and secure sensitive information, assets, and digital interactions.

- Comprehensive public and private trust portfolio (SSL, Digital Signature, PKI, IoT) helps you secure sensitive information, assets, and digital interactions
- Visibility and governance for your trust environment
- Provide trusted identities for people, systems, and things
- Reduce error-prone manual processes
- Certificate lifecycle management
- Seamlessly transform your certificate ecosystem, whether cloud-hosted, on-premises, or hybrid

Entrust Datacard helps its customers find rogue or out-of-scope certificates across locations and export them to the central management console. Further, the company has a certificate recycling subscription model that provides the customer security team with the flexibility to select specific certificate expiry dates and reuse certificate licenses to predict costs and plan ahead. The expired certificate license is sent to a certificate pool to be used later.

Entrust Datacard has launched an e-store that acts as a self-service portal for customers. Since its launch, the company has seen a steady transition of small-value purchases from telephone conversations to the e-commerce portal.

Entrust Datacard enables its customers to request a wide variety of certificates from a single management console or through REST API integration. The CA ensures that the complete certificate chain is included when picking up certificates and validates certificate installation on a recurring basis. Further, Entrust Datacard provides tools to enable

customers to automatically install certificates, reducing errors and eliminating manual installation time.

In addition, the ECS certificate management platform has capabilities for customers to monitor certificates for successful deployments, and monitor servers and applications for vulnerabilities or threats related to certificates. If and when the platform detects an anomaly, the security teams receive alerts that can be escalated for triaging and further processing. The platform also notifies users of any certificate expiry, violation of certificate policy, and best practices.

Through its integration with Qualys SSL Server Test, Entrust Datacard offers its customers an automated SSL server test. In this case, the ECS platform scans customer websites on a weekly basis for security configurations and reports on any deviations. The dashboard allows customers to view scores of a particular group of certificates, drill down to view details of individual certificates or websites, and suggest possible causes. This kind of analysis helps businesses to identify certificate related vulnerabilities and develop mitigation steps based on best practices support.

Entrust Datacard has come up with thoughtful solutions on how to blend into DevOps methodologies the security features that information security teams require without taxing resources or undermining the DevOps culture. As a result, it is the first CA to develop an Ansible module that automates certificate deployment at scale onto an unlimited number of endpoints enabling a DevSecOps experience for TLS/SSL.

Entrust Datacard also has technological partnerships with various vendors in the ecosystem. For instance, the CA increases its reach by working with leading multi CA management platforms such as Venafi and AppViewX.

Strong Growth Trajectory

Entrust Datacard has exhibited strong and consistent growth over recent years. In terms of unit shipments, the CA has exhibited a 15% average YoY growth rate in OV certificates and 36% in EV certificates since 2016. As a benchmark, the industry average YoY growth rate of the EV certificate segment since 2016 was 10.3%, which attests to the above-average growth of Entrust Datacard in this segment. Based on Frost & Sullivan's analysis of the TLS certificate market, Entrust Datacard holds the second largest market share in terms of revenue in the high assurance segment.

Innovation Fueling Future Growth

Entrust Datacard designs its product innovation based on its customers' pain points. For instance, Entrust Datacard recognized that businesses today handle certificates from different CAs and for different appliances, creating more workload for the security teams. Therefore, to enable scalable deployment of certificates in an automated way, the CA released a plug-in for Ansible. Ansible is a widely used, open-source software provisioning, configuration management, and application deployment tool. By connecting this tool with the Entrust Certificate Services (ECS) certificate management platform, customers can ensure timely certificate renewals.

Entrust Datacard also is the first commercial CA to integrate its platform with ServiceNow, the IT Service Management tool. This integration enables customers to integrate their certificate management workflow with other IT management operations. Entrust Datacard released this update based on feedback received from its customers.

Further, Entrust Datacard was the first commercial CA to release Verified Mark Certificates (VMCs) that allow the customer's official logo to appear in a secure position in an email. VMC works by verification of registered trademarks of an organization by a CA. The CA then adds the validated information into the VMC and in CT logs for public disclosure. Any email communication originating from this company will then display the VMC in the email. This enables its customers to increase branding opportunities and reduces phishing attempts.

Delivering High Customer Satisfaction

Frost & Sullivan finds Entrust Datacard's certificates to be optimally priced given the host of features that it makes available. The company's pricing falls into the medium range, in contrast to the premium pricing models followed by its competitors. For instance, a public certificate purchase from Entrust Datacard includes a website security bundle that enables remote web-based malware scanning and reputation monitoring, for no extra cost. Further, the company offers a value-added feature called Swaps, which enables customers to exchange their unused certificate inventory with certificates that are of value to them.

The company's Platinum Services is a feature-rich offering that can be bought separately by the customer, in addition to the certificate cost. It provides a unique selection of advanced security technology to help users manage their cryptographic inventory against standard and quantum policies (to support crypto agility), detects public and private certificates residing past the end-points, and offers extended support and verification benefits.

And, perhaps most importantly, Entrust Datacard has an excellent track record for transitioning their customers to meet new compliance requirements. There have been several recent instances when new baseline requirements meant a swift changeover to update customers during tight, but critical timelines. Entrust Datacard was able to execute on them successfully, avoiding certificate mis-issuance and system outages.

Entrust Datacard guides its customers through the PKI and identity management journey helping them to establish next level public and private trust. The company shares regular communications with its customers with regards to best practices, new releases, industry insights, and key highlights from the CA/Browser forum proceedings. Ongoing best practices communications educate and promote online security to keep customers, as well as all TLS users, compliant and maintain server security.

Entrust Datacard has taken a leading role in preparing for post quantum cryptography by collaborating with other organizations to propose new IETF X.509 certificate formats and has been proactively leading discussions in the IETF Forums where their propositions for quantum resistant algorithms are published.

Entrust Datacard has achieved a renewal rate of 99%, a key indicator of customer satisfaction, in part by following a consultative approach in engaging with its customers. Customers receive regular updates on planned outages and feature upgrades. Entrust Datacard's customer support team is available via telephone, emails, or web-based chat interfaces. The support engineers undergo certification exams to ensure that they are equipped to handle complicated customer queries.

Conclusion

As the digital world expands and the threat landscape evolves, enterprises need to deploy more and more certificates to improve digital trust. In such scenarios, scalability, availability, and speed of certificate issuance are key requirements for businesses and CAs. Further, the number of use cases in PKI solutions has expanded beyond web security and identity management. Entrust Datacard, with its customer-focused approach, goes beyond certificate issuance and management. With its value-added features in flexible packaging, the company has garnered customer satisfaction and trust.

With its strong overall performance, Entrust Datacard has earned Frost & Sullivan's 2020 Customer Value Leadership Award.

Significance of Customer Value Leadership

Ultimately, growth in any organization depends on customers purchasing from a company and then making the decision to return time and again. Satisfying customers is the cornerstone of any successful growth strategy. To achieve this, an organization must be best in class in 3 key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding Customer Value Leadership

Customer Value Leadership is defined and measured by two macro-level categories: Customer Impact and Business Impact. These two sides work together to make customers feel valued and confident in their products' quality and performance. This dual satisfaction translates into repeat purchases and a lifetime of customer value.

Key Benchmarking Criteria

For the Customer Value Leadership Award, Frost & Sullivan analysts independently evaluated Customer Impact and Business Impact according to the criteria identified below:

Customer Impact

- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Business Impact

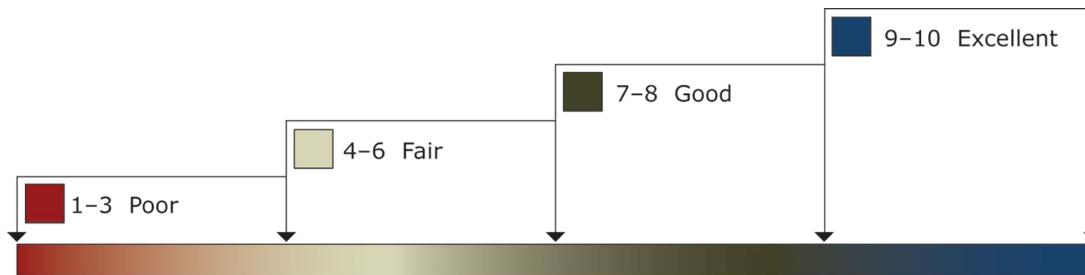
- Criterion 1: Financial Performance
- Criterion 2: Customer Acquisition
- Criterion 3: Operational Efficiency
- Criterion 4: Growth Potential
- Criterion 5: Human Capital

Best Practices Award Analysis for Entrust Datacard

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows research and consulting teams to objectively analyze performance according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation. Ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard considers Customer Impact and Business Impact (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, Frost & Sullivan has chosen to refer to the other key participants as Competitor 1 and Competitor 2.

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Customer Value Leadership	Customer Impact	Business Impact	Average Rating
Entrust Datacard	9	9	9.0
Competitor 1	7	9.5	8.25
Competitor 2	7	6.5	6.75

Customer Impact

Criterion 1: Price/Performance Value

Requirement: Products or services offer the best value for the price, compared to similar offerings in the market.

Criterion 2: Customer Purchase Experience

Requirement: Customers feel they are buying the optimal solution that addresses both their unique needs and their unique constraints.

Criterion 3: Customer Ownership Experience

Requirement: Customers are proud to own the company's product or service and have a positive experience throughout the life of the product or service.

Criterion 4: Customer Service Experience

Requirement: Customer service is accessible, fast, stress-free, and of high quality.

Criterion 5: Brand Equity

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty.

Business Impact

Criterion 1: Financial Performance

Requirement: Overall financial performance is strong in terms of revenue, revenue growth, operating margin, and other key financial metrics.

Criterion 2: Customer Acquisition

Requirement: Customer-facing processes support the efficient and consistent acquisition of new customers, even as it enhances retention of current customers.

Criterion 3: Operational Efficiency

Requirement: Staff is able to perform assigned tasks productively, quickly, and to a high quality standard.

Criterion 4: Growth Potential

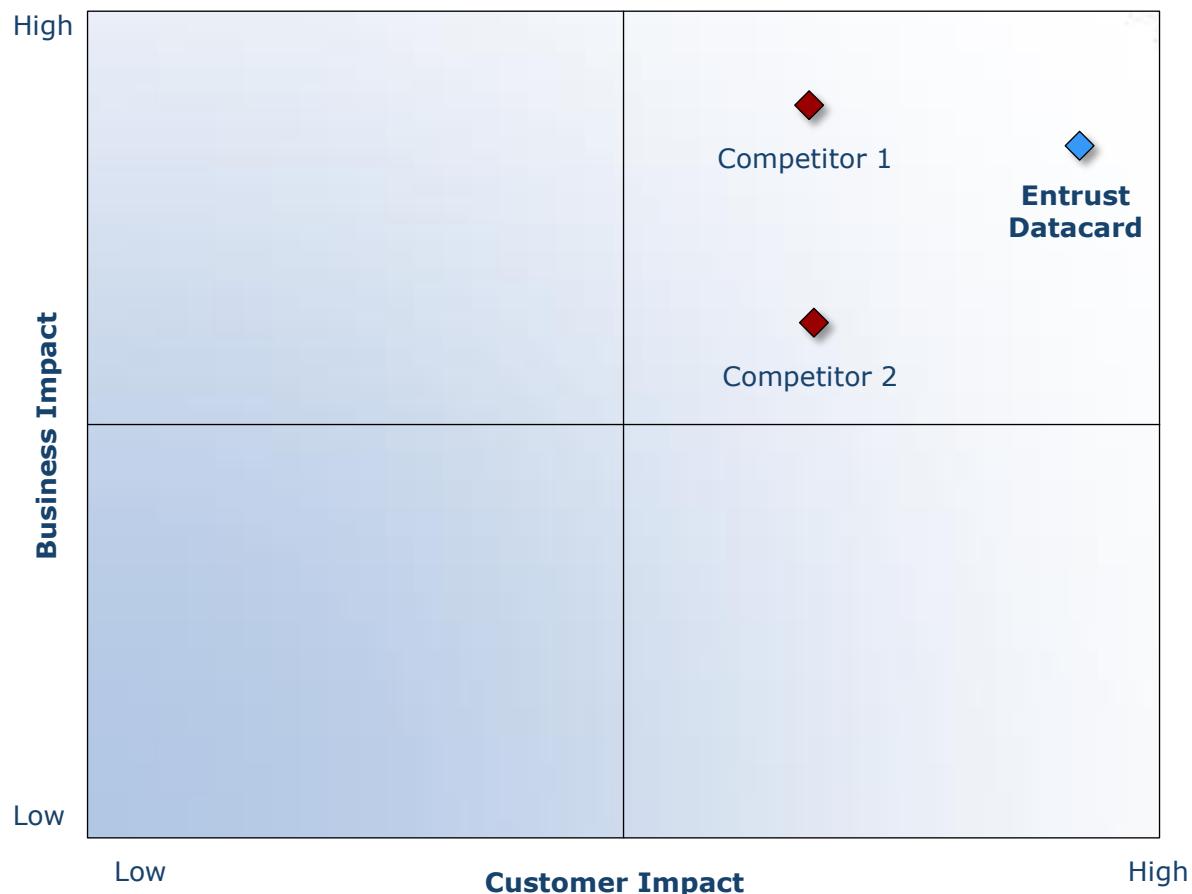
Requirements: Customer focus strengthens brand, reinforces customer loyalty, and enhances growth potential.

Criterion 5: Human Capital

Requirement: Company culture is characterized by a strong commitment to quality and customers, which in turn enhances employee morale and retention.

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.



Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate award candidates and assess their fit with select best practices criteria. The reputation and integrity of the awards are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify award recipient candidates from around the world	<ul style="list-style-type: none"> Conduct in-depth industry research Identify emerging industries Scan multiple regions 	Pipeline of candidates that potentially meet all best practices criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> Interview thought leaders and industry practitioners Assess candidates' fit with best practices criteria Rank all candidates 	Matrix positioning of all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> Confirm best practices criteria Examine eligibility of all candidates Identify any information gaps 	Detailed profiles of all ranked candidates
4 Initiate research director review	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> Brainstorm ranking options Invite multiple perspectives on candidates' performance Update candidate profiles 	Final prioritization of all eligible candidates and companion best practices positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> Share findings Strengthen cases for candidate eligibility Prioritize candidates 	Refined list of prioritized award candidates
6 Conduct global industry review	Build consensus on award candidates' eligibility	<ul style="list-style-type: none"> Hold global team meeting to review all candidates Pressure-test fit with criteria Confirm inclusion of all eligible candidates 	Final list of eligible award candidates, representing success stories worldwide
7 Perform quality check	Develop official award consideration materials	<ul style="list-style-type: none"> Perform final performance benchmarking activities Write nominations Perform quality review 	High-quality, accurate, and creative presentation of nominees' successes
8 Reconnect with panel of industry experts	Finalize the selection of the best practices award recipient	<ul style="list-style-type: none"> Review analysis with panel Build consensus Select recipient 	Decision on which company performs best against all best practices criteria
9 Communicate recognition	Inform award recipient of award recognition	<ul style="list-style-type: none"> Inspire the organization for continued success Celebrate the recipient's performance 	Announcement of award and plan for how recipient can use the award to enhance the brand
10 Take strategic action	Upon licensing, company is able to share award news with stakeholders and customers	<ul style="list-style-type: none"> Coordinate media outreach Design a marketing plan Assess award's role in strategic planning 	Widespread awareness of recipient's award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of the research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, resulting in errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, helps clients accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's growth team with disciplined research and best practices models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages nearly 60 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on 6 continents. To join Frost & Sullivan's Growth Partnership, visit <http://www.frost.com>.