

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

FROST & SULLIVAN BEST PRACTICES AWARD

CUSTOMER DATA PLATFORMS - GLOBAL

Company of the Year 2019

arm TREASURE DATA

FROST & SULLIVAN

2019

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Background and Company Performance

Industry Challenges

Data is growing exponentially as mobile and IoT devices proliferate alongside online and offline transactional data. This creates an ever-growing number of customer touchpoints within the customer journey. This data is often siloed in departmental, or use-case-specific systems, unorganized data lakes, or swamps.

Complex aggregations of raw and unstructured data limited companies' ability to derive valuable insights. This is even more challenging for business users whose expertise is not in data science. Significant investment in data management is needed to unify, secure and govern customer data. To manage customer data in-house and use it effectively to improve the customer experience can often be daunting – and sometimes almost impossible. Developing in-house expertise to enable customer data unification and the creation of comprehensive, rich customer views to power personalized customer experiences in real time can seem light-years away.

Despite these obstacles, technology players such as Alibaba, Amazon, Facebook, Google, Spotify, Tencent, and Uber have fueled their meteoric rise by harnessing customer data to exceed consumer expectations. These companies are revolutionizing customer interaction across industries, making customer experience their crucial differentiator. How did they execute that?

A recent study also found that “The most dominant theme emerging from this year’s research is the importance of customer data and the greater levels of urgency that are apparent when it comes to harnessing data for commercial gain.”¹ How can enterprises harness customer data? Retail faces the biggest challenge since customer perception directly impacts revenue. Traditional in-store retail does not capture and leverage customer engagement data, which is needed to optimize customer experiences like eCommerce. Many retailers own multiple databases with millions of customer profiles that cannot be properly unified and resolved to understand how many actual unique customers they have. This makes it impossible to compete with digital native and other data-savvy organizations that keep investing and hence only increase their data-driven advantage.

Retailers also struggle to compete with ‘big tech’ and startups for the necessary talent. Given this gap in the industry, technology providers are working on solutions optimized to help retailers next-level their customer data and analytics game. Customer Data platforms (CDPs) have emerged as a type of customer data management solution that helps all customer-facing teams – whether B2C or B2B – bring together, connect and analyze in real-time all the data sources they need to generate an easily accessible unified view of all customer data to drive better customer experiences.

¹ <https://tinyurl.com/vy2rl7kn>, accessed on 16 October 2019

Visionary Innovation and Performance/Customer Impact

Cambridge, UK-based Arm has understood the desire of businesses to understand and attune to every single customer, regardless of how many millions of them there may be. In mid-2018 it acquired Mountain View, California-based CDP provider Treasure Data, subsequently adopting the name Arm Treasure Data.

A Modular Best Practice Customer Data Platform Offering

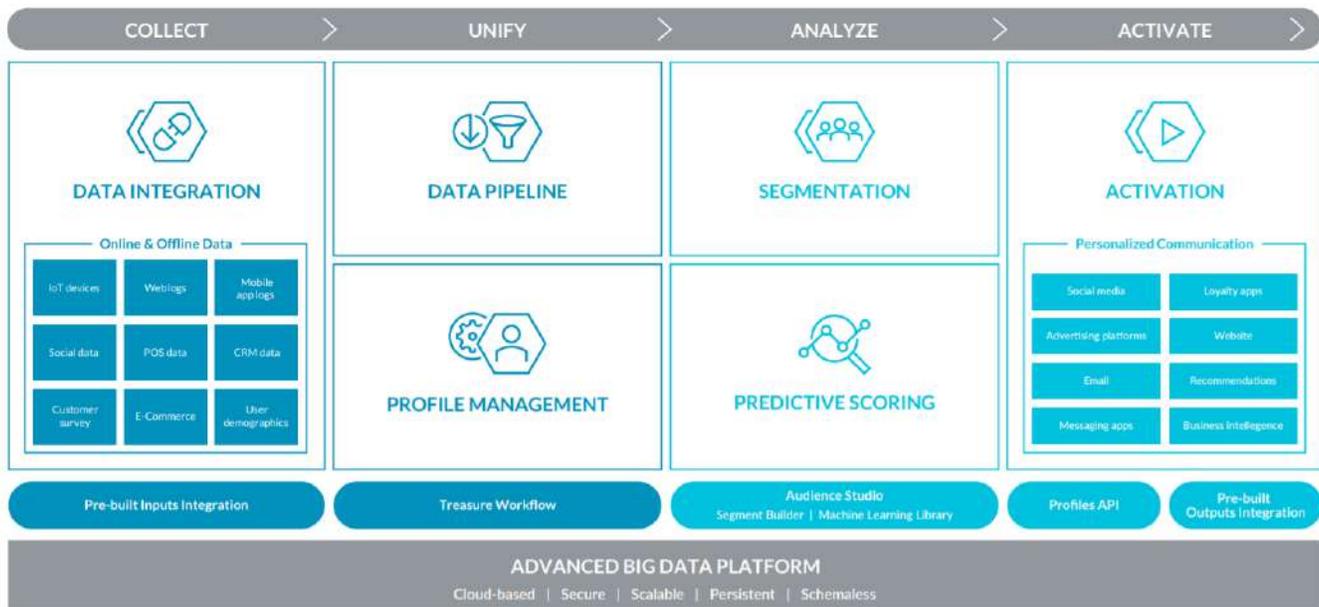
The company’s CDP value proposition statement aptly captures its very essence, noting that the solution

“translates millions of data points – online, offline, and even from IoT devices – to create individual customer profiles. Unify data across your organization into one solution, and discover immediate insights that drive growth.”²

It thus provides an excellent example of the type of powerful platform that enables marketers to gain insight, take action to personalize marketing, build excellent customer experience, and drive loyalty.

Exhibit 1 provides an overview of the scope of Arm Treasure Data’s CDP offering, spanning data collection, unification, analysis and activation.

Exhibit 1: Functional Scope of Arm Treasure Data CDP



Source: Arm³

² <https://tinyurl.com/y333252j>, accessed on 18 October 2019

³ <https://www.treasuredata.com/wp-content/uploads/Datasheet-Arm-Treasure-Data-for-Retail.pdf>, accessed on 18 October 2019

This modularity is noteworthy, allowing for additional marketing functionality on top of the core customer analytics, data management platform, infrastructure, and support bundle. The latter brings a firm foundation of comprehensive data management and reporting capabilities, flexible dashboards, profile management, and workflow automation. These add open APIs and over 130 pre-built connectors to integrate with common BI and marketing systems, to collect data, and to activate profiles.

Additional marketing functionalities start with segmentation and personalization. They help improve engagement, targeting, and the efficiency of digital advertising, email marketing, website personalization and other types of campaigns. Intuitive visual interfaces make it efficient and effective for customer-facing staff to understand such things as the number of people in a defined audience, related trends, full customer profiles, and derived characteristics (e.g. content affinity). Equally useful is the ability to leverage a stream of website event data to reconcile behavior and enrich segments automatically, and the capacity to execute personalization in real-time.

On top of this, Arm Treasure Data offers advanced analytics and AI-based capabilities to predict customer behavior such as propensity to buy and churn. Placing the ability to manage predictive models in the hands of customer-facing teams without requiring analytics/data science expertise democratizes access to customer insight. While empowering business users, it also supports data lake exploration and advanced analytics geared towards data scientists. It enables customer-facing organizations to equip themselves with better insight, be faster in adopting more customized interaction, and deliver this with less effort.

Finally, the CDP proposition extends to advanced security features, well beyond basic security profiles to keep user data safe. Examples include policy-based access control with the ability to set policies by region and role, the ability to use authentication services to ensure secure identity federation,⁴ and sophisticated logging, tracking, querying, and auditing functionalities.

Operational Performance & Benefits

Arm Treasure Data's trusted CDP manages hundreds of petabytes of data. It can ingest data from hundreds of sources and unify online and offline customer IDs to provide data orchestration, workflow management, and BI support. The CDP avoids the resource needs of data warehousing for persistent data storage through its ability to ingest data in schema-less fashion.

The availability of a single view of each customer simplifies the collaboration of different customer-facing teams across marketing, product and digital functions throughout the customer journey. Improved cross-channel personalization and targeting also increase campaign efficiency.

⁴ Using the Security Assertion Markup Language (SAML) protocol

All of this is happening at scale: Arm Treasure Data collects up to 2 million events per second (meaning hundreds of billions of events per day), activating over tens of billions profiles per month.⁵

The company notes the ability to implement the solution at small scale in a matter of weeks, emphasizing its desire to make deployment fast and smooth. With a typical timeline of a few months to start generating results, the company can pride itself on delivering a rapid time-to-value. It also doesn't require an organization to rip and replace existing infrastructure for deployment as it ensures seamless interoperability with existing technology as one of its core strengths.

Growing in State and Stature

The acquisition of Treasure Data by Arm brings the significant financial resources of Arm and its owners SoftBank Group and SoftBank's Vision Fund behind Arm Treasure Data, suggesting that the company and solution is more than just financially stable. Beyond bringing financial muscle, the fact that ultimate ownership lies with SoftBank Group and SoftBank's Vision Fund means that the entire ownership structure has innovation in its DNA.

Availability has expanded from the US and Japan to Europe in the first half of 2019: "Our first EU data center is online and provides secure services to the greater European region. This was a key investment in our plans for regional expansion of our enterprise CDP."⁶ Arm Treasure Data now reports data centers spanning all continents.⁷

Other 2019 improvements include the ability for administrators to regulate data access and grant permissions through granular policies that can be based on roles, geographies, units, or any other classification criteria. The company has also introduced Treasure Boxes, an industry-first CDP solutions library of prebuilt sets of code and applications and Custom Scripts that enable companies to run AI/ML-based analytics on their data to drive actionable insights for marketing campaigns.⁸ Throughout the year Arm Treasure Data continued to not only add integrations for applications such as Box, Snowflake, and Mailpublisher, but also employ a group of developers dedicated to the maintenance of these integrations.⁹

The versatility of the technology allows it to adapt to a wide range of use cases and add value by addressing frequently unique requirements.

⁵ https://www.treasuredata.com/wp-content/uploads/TreasureData_Data_Sheet.pdf, 18 October 2019

⁶ <https://blog.treasuredata.com/blog/2019/03/21/new-look-features-allow-all-cdp-stakeholders-to-work-together-closely>, accessed on 18 October 2019

⁷ <https://www.treasuredata.com/learn/why-treasure-data/>, accessed on 25 October 2019

⁸ https://www.treasuredata.com/press_release/arm-treasure-data-introduces-treasure-boxes-custom-scripts/, accessed on 25 September 2019

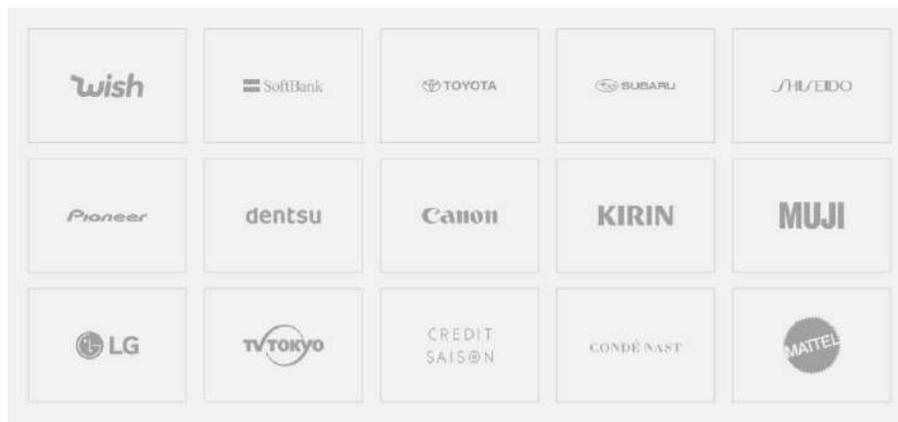
⁹ <https://blog.treasuredata.com/blog/2019/03/21/new-look-features-allow-all-cdp-stakeholders-to-work-together-closely>, accessed on 18 October 2019

Happy Customers

Arm Treasure Data is an innovator that focuses on finding bespoke solutions to unique use cases, frequently involving complex IoT integration. At the same time, the company is obsessively focused on ensuring smooth customer implementation experiences.

An impressive list of over 400 customers¹⁰ across 10 industries¹¹ underlines the solidity and appeal of the CDP offering:

Exhibit 2: Arm Treasure Data Customers (Selection)



Source: Arm¹²

Challenging implementations with impressive results and quality customer experience have been producing happy customers for years. An example is Shiseido, a leading global personal care company with annual revenues of 10 billion US dollars.¹³ Shiseido implemented Arm Treasure Data's CDP to centralize and connect its collected customer data from disconnected online and offline data sources; the implementation enabled segmentation that underpins truly personalized experiences via its loyalty app. The endeavor extended further to third-party data from several data management platforms. The new data management solution also became necessary to make data management fit for the dynamic marketing data beyond the established extract, transform, load process that was feeding the company's data warehouse.^{14,15} The solution enables marketers to send the right message or offer at the right time. Beyond improving customer engagement and experience, this has helped Shiseido achieve a tangible 20% increase in in-store revenue per loyalty program member and an 11% increase in overall company revenue.

¹⁰ Company-provided data

¹¹ <https://www.treasuredata.com/learn/why-treasure-data/>, accessed on 04 December 2019

¹² https://www.treasuredata.com/wp-content/uploads/TreasureData_Data_Sheet.pdf, accessed on 17 October 2019

¹³ <https://www.forbes.com/companies/shiseido/#4ebe850d1d75>, accessed on 18 October

¹⁴ Analyst briefing on 17 May 2019

¹⁵ Compare: <https://www.treasuredata.com/customers/shiseido/>, accessed on 18 October 2019

The following customer testimonial speaks for itself:

“Our new customer data platform built on Arm Treasure Data is fundamentally changing how we communicate with our customers. Blasting emails to everyone who tried samples or bought a particular product won’t lead to customer delight. Detecting a mood swing in each customer and changing the tone of push notifications does.”

Kenji Yoshimoto, Chief Analyst for Direct Marketing, Shiseido¹⁶

Focus on Retail

Frost & Sullivan approached Arm Treasure Data from a retail industry research perspective, reflecting the CDP provider’s profound expertise in this vertical, amongst others.

Tying together purchasing behavior in-store, online, and via mobile can deliver revelatory insights. From this perspective, “Arm bridges the physical and digital data divide for retail, CPG and consumer electronics.”¹⁷ The company does so by enabling a vast number of applications that can include in-store behavior analysis based on people tracking through cameras, beacons and mobile devices. Its CDP can provide the foundation for personalization of in-store digital signage, personalized promotions, and hyperlocalizing merchandise assortments. It can also enable mobile check-out/scan and go, and cashier-free checkout.

Japanese retail chain Muji operates more than 650 stores around the world. It works with Arm Treasure Data to bring together digital browsing data with in-store purchase history to build complete customer profiles. By further tying in real-time store inventory, the solution has made it possible to offer real-time data-driven, personalized coupons and targeted in-app push notifications. Last but not least, Arm Treasure Data’s enables location-aware promotions through its machine learning capabilities.

Over a two year period, Arm Treasure Data helped Muji collect and process over 8 million digital events (web and mobile) daily and analyze over three billion transactions annually. Reported results were a 46% increase in in-store revenues and a doubling in coupon redemptions.¹⁸

To form Arm’s retail offering, the CDP is complemented by – and tightly integrated with – Arm’s Pelion IoT platform, enhancing the ability to connect physical in-store data with digital customer data, to enable unified data management and build a compelling retail offering. According to reports, 30 top retail, CPG, and eCommerce companies use Arm Treasure Data’s CDP.¹⁹

¹⁶ Analyst briefing on 17 May 2019

¹⁷ <https://www.treasuredata.com/wp-content/uploads/Arm-Retail-Solution.pdf>, accessed on 18 October 2019

¹⁸ <https://www.treasuredata.com/customers/muji/>, accessed on 17 October 2019

¹⁹ <https://www.treasuredata.com/wp-content/uploads/Datasheet-Arm-Treasure-Data-for-Retail.pdf>, accessed 17 October 2019

Deserved Recognition

The commitment and achievements in delivering stand-out value to its customers have already led to deserved recognition for Arm Treasure Data and its CDP. At the Marketing Technology awards in 2019, it was named 'Best Customer Data Platform', with particular note made of its "ability to securely unify all types of data, scalability and use of advanced machine learning for fast, actionable insights that help transform and drive growth for some of the most successful businesses in the world."²⁰

Closing the Loop

At Frost & Sullivan, we have been at the forefront of customer experience and related technology as business researchers, consultants, thought leaders, and as educators through our regular MindXchange executive events.²¹ As such, we feel obliged to remind that it is the age-old wisdom that customer retention is cheaper than customer acquisition that makes clear why customer experience has become the all-important performance driver it is today. Customer experience drives purchase frequency, purchase value, increases loyalty, and generates advocacy. In a world where increasingly every unique product proposition – whether digital or physical – can be copied instantaneously, experiences become the only differentiator.

"The only things that are increasing in cost while everything else heads to zero are human experiences—which cannot be copied. Everything else becomes commoditized [...]."

Kevin Kelly, founding executive editor of Wired magazine, author of *The Inevitable* (2016)²²

Conclusion

The key takeaway from this analysis echoes a recent Frost & Sullivan's study on retail: "Data Drives Everything. Customer Experience is Everything".²³

CDPs can help to improve the customer experience by harnessing data better. Arm Treasure Data is not resting on its laurels but has maintained its impressive work, continuously building on its vertical expertise and expanding its geographic presence.

The acquisition of Treasure Data by Arm brings significant financial resources from an obsessively innovation-focused owner; we should expect to see more innovative implementations from Arm Treasure Data going forward. With its strong overall performance, Arm Treasure Data has earned Frost & Sullivan's 2019 Customer Data Platform Company of the Year Award.

²⁰ https://www.treasuredata.com/press_release/arm-treasure-data-named-best-customer-data-platform-at-2019-marketing-technology-awards/, accessed on 14 October 2019

²¹ Compare: <https://ww2.frost.com/event/live-events/>, accessed 17 October 2019

²² Kevin Kelly, *The Inevitable: Understanding the 12 Technological Forces That Will Shape Our Future*, <https://highlights.sawyerh.com/volumes/56b3ef73-d980-4e42-8798-d34eec8ad688>, accessed on 21 October 2019

²³ <https://cfs.frost.com/p/297230703#!/ppt/c?id=MF04-01-00-00-00&hq=customer%20experience%20is%20everything>, accessed on 16 October 2019

Significance of Company of the Year

To receive the Company of the Year Award (i.e., to be recognized as a leader not only in your industry, but among non-industry peers) requires a company to demonstrate excellence in growth, innovation, and leadership. This excellence typically translates into superior performance in three key areas—demand generation, brand development, and competitive positioning—that serve as the foundation of a company’s future success and prepare it to deliver on the 2 factors that define the Company of the Year Award: Visionary Innovation and Performance, and Customer Impact).



Understanding Company of the Year

Driving demand, brand strength, and competitive differentiation all play critical roles in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on Visionary Innovation and Performance to enhance Customer Impact.

Key Benchmarking Criteria

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated each factor according to the criteria identified below.

Visionary Innovation and Performance

- Criterion 1: Addressing Unmet Needs
- Criterion 2: Visionary Scenarios through Mega Trends
- Criterion 3: Implementation of Best Practices
- Criterion 4: Blue Ocean Strategy
- Criterion 5: Financial Performance

Customer Impact

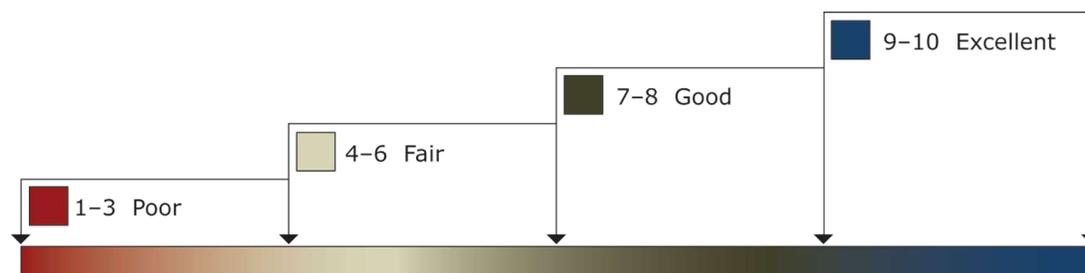
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practices Award Analysis for Arm Treasure Data

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 Visionary Innovation and Performance and Customer 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>			
Company of the Year	Visionary Innovation & Performance	Customer Impact	Average Rating
Arm Treasure Data	9	9	9
Competitor 1	8	7	7.5
Competitor 2	7	7	7

Visionary Innovation & Performance

Criterion 1: Addressing Unmet Needs

Requirement: Implementing a robust process to continuously unearth customers' unmet or underserved needs, and creating the products or solutions to address them effectively.

Criterion 2: Visionary Scenarios through Mega Trends

Requirement: Incorporating long-range, macro-level scenarios into the innovation strategy, thereby enabling first-to-market growth opportunity solutions.

Criterion 3: Implementation of Best Practices

Requirement: Best-in-class strategy implementation characterized by processes, tools, or activities that generate a consistent and repeatable level of success.

Criterion 4: Blue Ocean Strategy

Requirement: Strategic focus on creating a leadership position in a potentially uncontested market space, manifested by stiff barriers to entry for competitors.

Criterion 5: Financial Performance

Requirement: Strong overall business performance in terms of revenue, revenue growth, operating margin, and other key financial metrics.

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

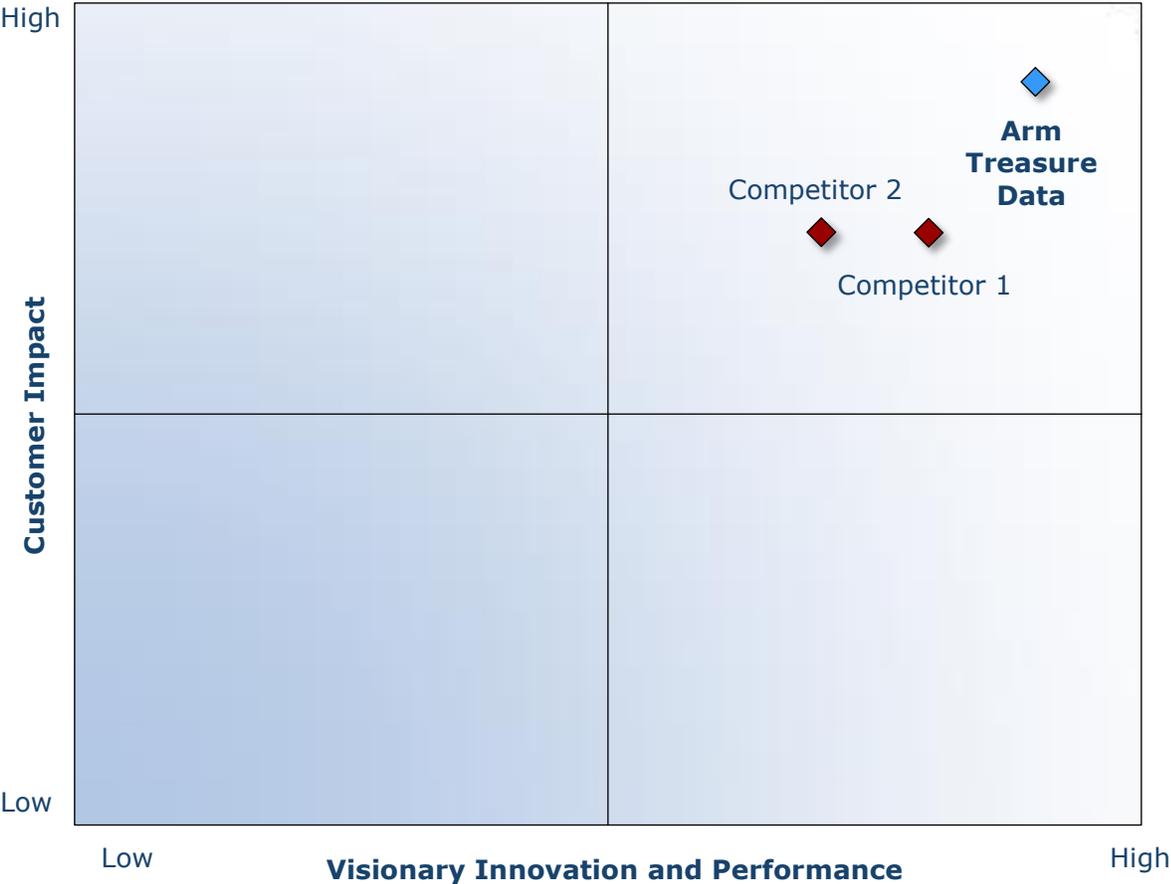
Requirement: Customer service is accessible, fast, stress-free, and of high quality.

Criterion 5: Brand Equity

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

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 practice 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 winner 	Decision on which company performs best against all best practices criteria
9 Communicate recognition	Inform award recipient of recognition	<ul style="list-style-type: none"> • Present award to the CEO • 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 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>.