

EBOOK

# Diving Deeper & Predicting the Future

CX Analytics Explained





## Overview

Wouldn't it be lovely if your business had a crystal ball that would tell you what the future holds and how to improve it? With that information, you could plan the most effective steps to drive revenue or beat out the competition.

Unfortunately, there are no crystal balls in business. But, it doesn't follow that businesses have no hope for getting insights that enable well-informed, proactive decisions. Analytics are a data-driven, statistically sound way for businesses to identify areas for improvement, predict the future, and identify the best actions to push your business forward.

# Defining Analytics

Analytics are the systematic computational analysis of data. While the big words make that sound very scary, it is actually quite simply analyzing data for a specific purpose. And that purpose is to unlock the data's story.

The depth and detail of the story your data tells are directly linked to the type of analysis you conduct. For the purpose of this eBook, we will zoom in on three types of analytics.

These are basic, advanced, and predictive. Each type of analysis is extremely valuable, telling part of your data's story. Basic analytics provide a general overview of your data, while advanced analytics dive deeper to help you find the 'why' and 'how' in the data. Predictive analytics go one step further. They provide data driven, statistically qualified predictions about the future.

In this eBook, we'll dive deeper into these areas of analytics to help you learn how you can benefit.

## Basic Analytics

What happened?

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Customer satisfaction scores

## Advanced Analytics

Why did it happen and how can we do better?

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Root causes of customer behaviors

## Predictive Analytics

What will happen next?  
What will happen if we change...

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Customers at risk for churn

# It all Starts with Collecting the Right Data

In today's highly competitive business environment, companies leverage customer analytics to help them identify opportunities to increase revenue, improve operations, and achieve a competitive advantage. The most powerful advanced and predictive analytics, however, hinge on gathering the right combination of new and historic, multi-channel and multi-source feedback, as well as contextual data.

## Multi-channel

When it comes to collecting customer feedback, one size does not fit all. There are many touchpoints throughout the customer lifecycle (sales, support, etc.). And there are a variety of channels through which feedback for each touchpoint can be collected. Organizations that do this well will enjoy the benefits of a comprehensive and holistic view of their customer's experience.

### CHANNELS



Web



Email



Mobile



Face-to-Face



Telephone



Social Media

## Multi-source

Multi-source data refers to rich feedback and contextual data from a variety of sources. Generally, different types of customer data, such as financial, transactional, etc., are stored in distinct purpose-built systems. Unfortunately, these purpose-built systems alone are unable to provide 'big picture' customer insights. The key to unlocking your customer data's full potential is to integrate information from your purpose built systems with multi-channel feedback data to provide deeper detail and context that feeds accurate decision making and drives organizational improvement.

**"Powerful insights are uncovered by linking together data from a variety of sources and channels then seeking statistical relationships across that data"**

SONDRE GILMSDAL

Forsta Data Scientist & Machine Learning Expert

### SOURCES



**Customer and employee surveys**



**HR systems**



**Transactional systems**



**CRM systems**



**Financial systems**




**Support ticket systems**

# Here's How Forsta Can Help!

## Collecting Multi-Channel, Multi-Source Data

- Forsta, our flexible software platform for Customer Experience, Employee Engagement, and Market Research programs, provides multi-channel data collection so your customers can provide feedback in the way that suits them, driving high response rates and greater insight. But it doesn't stop there!
- With Forsta's open architecture design and a range of APIs, there are no barriers to enterprise-wide integration. This means that you can easily bring in data from other business systems, such as Salesforce.com or your financial system, to provide context and enable the discovery of deeper insights.
- Forsta's centralized data hub enables you to bring together all of your data sources from every channel into a single hub where the data can be mapped and ultimately analyzed as though it was a single data set. From there, reports, dashboards, and data visualizations can be delivered to the right people in real time.

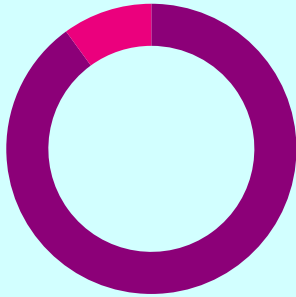


# It all Starts with Collecting the Right Data

The data you collect from your selected variety of channels and sources comes in different forms. Generally speaking, the data is either “structured” or “unstructured”. Coupling unstructured and structured data is key to unlocking the deepest customer insights. For example, while structured data has the potential to answer specific questions, unstructured data has the potential to unearth insights into customer behaviors, wants, needs, and opportunities that you may not have considered otherwise.

## Structured Data

Structured data is highly organized. Generally, each piece of data is standardized and stored in a fixed field within a record, file, or database. Survey questions that provide respondents with a set list of answers from which they can select their response are a good example of structured data. Also, a significant amount of the data found in CRMs, financial systems, or other business systems is structured too. In these systems, the structured data is stored in a dedicated field within the systems and generally has a specific format for recording the data. Structured data is generally easy to report on because it’s so well organized.



**Up to 90%**  
**of all digital data**  
**is unstructured!**

[http://www.cio.com/  
article/2941015/big-data/  
solving-the-unstructured-  
data-challenge.html](http://www.cio.com/article/2941015/big-data/solving-the-unstructured-data-challenge.html)

### Some examples of structured data may also include:

- Survey questions
- Financial information
- Customer demographic information
- Product information

## Unstructured Data

While structured data is extremely important, structured data alone may not always facilitate the depth of insight you need to realize the true power of analytics.

### The deepest insights often lie hidden in unstructured, free form content from:

- CRM notes
- Social media, blogs, rating and review sites
- Emails
- Responses to open-ended survey questions
- Call center data



# Here's How Forsta Can Help!

## Forsta's Dynamic Open Text Question Type

While open-ended survey questions can help you collect deeper insights while asking fewer survey questions, getting respondents to provide meaningful detail in their open-ended responses can be a challenge.

Forsta's dynamic open text questions are an excellent solution to this problem. Our Dynamic Open Text questions encourage respondents to provide deeper detail and more meaningful open text responses in two ways. First, each open text field is coupled with a color-coded gauge or status bar measuring the quantity of the feedback and encouraging respondents to provide more detailed responses. Secondly, this question type encourages respondents to provide higher quality responses by automatically identifying important keywords and phrases and asking the respondent to provide additional detail on those topics.

The best part is that this question type is highly configurable, making it easy for you to tailor things like text box sizes, status bar colors, keyword prompts, and the feedback provided to the respondent to suit your unique needs.

# Basic Data Analysis

Once you have the data you need, you are ready to begin analysis!

If all forms of analysis are intended to unlock the story behind your data, basic data analysis is the beginning of this story. Basic analysis will unlock “what happened”. While these calculations are considered “basic”, these techniques can reveal very important information.

## Results in Aggregate

At the highest level, you are able to review all of your quantitative data with no filters or exclusions – displaying the complete aggregated results. This is particularly useful when your goal is to identify top level trends. For example, one common use for results in aggregate is to see how well your business is performing on certain key metrics. Results in aggregate will answer questions like:

- What is the average score for overall satisfaction with customer services?
- What is the mean time for completing a survey?
- What percentage of respondents were promoters?

Data filters are a quick and easy way to highlight trends. With data filters, you can temporarily hide information that is not relevant to your current analysis. Using filters, you are able to segment and review relevant data on-the-fly for rapid basic analysis.

**Using data filters you can easily answer questions such as: How many survey respondents, who purchased Product X in 2017, rated your customer service as 'very good'?**

While there are many examples of the information by which your data can be filtered, some examples of **common filters include:**



Dates/data range



Level of organizational hierarchy



Product/product category



Customer segment or other customer demographic elements



Other data variables

## DID YOU KNOW

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A variable is a piece of information that describes a person, place, or thing. It is called a variable because it can “vary”. For example, if we were describing customers one variable (a piece of information that may vary from customer to customer), is the region in which they live.

<http://stattrek.com/descriptive-statistics/variables.aspx>

## Basic Cross Tabulations (also known as cross tabs):

Cross tabulations are data tables that make it easy to compare variables at-a-glance. These tables present results for two or more variables in a grid where X and Y axes facilitate comparison across the groups.

**For example, with basic cross tabs you can identify the survey respondents, by region, that consider themselves likely to recommend your services to a friend or colleague.**

# Here's How Forsta Can Help!

## Forsta's Approach to Basic Analytics

Recognizing the value of basic data analysis, Forsta supports all your needs for top-level analysis. Our basic analytics capabilities include (but are not limited to):

- Cross-tabs with counts and percentages, mean, median, mode, percentiles, standard deviation, variance, max, min, sum, standard error, affinity
- Support for both weighted and unweighted data
- Significance testing with t-tests, chi-square and z-score.

Best of all, every basic analysis performed on the Forsta platform can be conducted in near real-time. And, all types of basic statistical analysis can be run either as needed or at predefined intervals to support your organization's need for real-time insights.



	EMEA	JAPAN	NORTH AMERICA	SOUTH AMERICA	UK	OTHER
N	67	287	312	198	174	118
Company NPS®	-28.4	13.6	19.3	15.7	10.5	16.9
Product NPS®	33.3	54.8	43.9	63.8	62.3	52.5
Recommend Company						
Promoters	29.9%	44.8%	45.7%	44.9%	43.6%	48.3%
Passives	11.9%	24.1%	28%	25.8%	23.3%	20.3%
Detractors	58.2%	31.1%	26.4%	29.3%	33.1%	31.4%
Recommend Products						
Promoters	47.6%	67.9%	60.7%	75.6%	71.7%	64.4%
Passives	38.1%	19%	22.4%	12.6%	18.9%	23.7%
Detractors	14.3%	13.1%	16.8%	11.8%	9.4%	11.9%
Likelihood To Continue Doing Business						
Likely To Continue	22.2%	41.5%	36.7%	46.1%	43.9%	64.9%
Passive	40.7%	19.1%	27.7%	24%	18%	18.9%
Not Likely To Continue	37%	39.4%	35.6%	29.9%	38.1%	16.2%

Cross Tabulation: likelihood to recommend by region

# Advanced Analytics

Advanced analytics help you dive deeper, answering important business questions and uncovering the “whys” and “hows” hidden in your data. This type of information helps you to make and prioritize business decisions.

There are a wide range of advanced statistical techniques to support advanced and predictive analytics. Statistical techniques like these can help you more clearly understand your customers’ needs and other pressing business issues. To follow are a few examples of advanced statistical techniques and their potential applications in business.

## DID YOU KNOW

According to Harvard Business Review, most industries are nowhere close to realizing the true potential of analytics.

<https://hbr.org/2016/12/most-industries-are-nowhere-close-to-realizing-the-potential-of-analytics>

TECHNIQUE:	WHAT IT IS:	ANSWERS BUSINESS QUESTIONS LIKE:
<b>Affinity Index</b>	Shows the weight of a specific target audience compared to a total population	Is our publication reaching the desired target audience?
<b>Chi Square, T-Tests, &amp; Z-Score</b>	Statistical significance testing that helps you understand relationships between data elements	How has changing our product mix impacted our profits?
<b>Cluster Analysis</b>	A tool used to classify objects into groups	How can we best segment our customers to better understand their buying behaviors?
<b>Correlation</b>	Shows if there is a relationship between two or more variables	Is there a change in the amount customers spend when there is a change in their perception of the quality of their customer experience?
<b>Factor Analysis</b>	A data reduction technique used to consolidate variables and construct scales that measure opinions, attitudes, perceptions, or motivations	What brand attributes influence our customers' choices?
<b>Linear Regression</b>	Identifies relationships between multiple variables and can be used to predict future outcomes	How much can we expect revenue to increase if we improve our customer satisfaction score by 10%?



## Here's How Forsta Can Help!

### Forsta's Approach to Advanced Analytics

Forsta offers advanced statistical analysis such as significance testing, linear regression, factor analysis, cluster analysis, key driver analysis, impact analysis, correlation, and more. Again, all advanced analysis performed on the Forsta Plus platform can be conducted in near real-time. And, statistical analysis can be run as needed or at predefined intervals to support your organization's need for real-time insights.

### Best Practice Use Case: Forsta's Key Driver Analysis

Key driver analysis is one of the most powerful analysis techniques available to business today. Calculated using either correlation or regression analysis, key drivers help you identify the factors that influence or 'drive' business outcomes. The ability to identify key drivers can have a very positive impact on your business. It will help you focus on things that really matter to your customers, saving time and costs associated with pursuing "improvements" that may not really impact your business. Resources like technology, people, and money are limited. Key drivers inform managers where to target and how to prioritize resources for maximum result.

# Advanced Analytics

While structured data is easily analyzed by the quantitative methods previously explained, many companies will find that a significant amount of customer feedback is hidden in unstructured text from emails, CRM notes, or social media comments. Text analytics help you draw meaning from unstructured content so

## Text analytics:

The exponential rise in the volume of unstructured data leads to the inevitable conclusion that it can no longer be ignored if companies want to stay on top. Text is, after all, the primary method for recording thoughts, feelings, and expressing ideas. Text analytics is an advanced analytic technique that categorizes free form text and assesses the sentiment behind the statements.

The information collected from social and text analytics can help to inform decisions about customer experience, product design and performance, competitive intelligence, and generally help you to develop a better understanding of markets and trends.

## DID YOU KNOW

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In an Amazon review test, the sentiment analysis technology used by Forsta Genius™ Text Analytics platform achieved nearly 90% accuracy when comments were compared to star ratings. This is the same accuracy as is achieved by humans.

## The Magic Behind Text Analysis

The best technologies for text analytics leverage the latest in machine learning to categorize text and assess sentiment within each category. This has many advantages:

- **Adaptable:** learns from text to quickly adapt to different content styles
- **Fast:** for large volumes of text, speed and performance are critical
- **Forgiving:** learning from actual text makes it more forgiving of poor grammar or spelling
- **Language agnostic:** adding a new language simply requires a large amount of text and the linguistic knowledge to provide seed words for positive and negative sentiment there's no need to develop the software to handle the different grammatical rules.



## Here's How Forsta Can Help!

### Forsta's Text Analytics

Forsta is an advanced text analytics platform that helps you draw meaning from unstructured content by categorizing feedback and measuring its sentiment. It's tightly integrated with Forsta, our flexible software platform for Customer Experience, Employee Engagement, and Market Research programs, so you can easily combine structured data from surveys and other sources with the depth of insight and unprecedented level of detail only available in open-ended feedback.

# Predictive Analytics

Predictive analytics are the final chapter in your data's story. This form of analysis helps organizations predict what happens next. In more technical terms, predictive analytics helps you make statistically probable predictions about the future, enabling you to make the right decisions and prioritize those decisions based on hard data.

In the world of customer experience, predictive analytics helps you to identify data patterns to uncover risks and opportunities through an analysis of customer data. It can help you answer questions such as:

- What is the impact of changes I want to make to the business?
- Which customers are at risk for churn?
- Where are the up-sell or cross-sell opportunities?
- What will my revenue be next year if I increase my NPS by 10 points?

## DID YOU KNOW

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One example of simple predictive analytics that you may already be using is a sales forecast. A sales forecast provides predictions about future unit sales based on past sales data. With this information, your sales teams develop a strategy to drive growth.

## How the Predictive Magic Happens

The primary tool for predictive analytics is a regression analysis. Based on a hypothesis, a regression analysis will measure the relationship between a dependent variable and one or more independent variables to help you identify the degree to which each independent variable affects the dependent variable. It's not as complicated as it sounds, really! Consider this one example:

**My hypothesis:** NPS, income, number of visits to our website (independent variables) are statistically correlated with the purchase of our company's widget (dependent variable).

**What I can learn:** A regression analysis lets you calculate the degree to which each independent variable (NPS, income, number of website visits) affects your customers' purchase behavior. With that, you can see the "importance" of each independent variable to their purchase decision. Furthermore, you can use that "importance" as a model to predict the likelihood that other, similar customers will also purchase your widget.

This kind of information can really help facilitate up-selling and cross-selling activity!

# Here's How Forsta Can Help!

## Forsta's Approach to Predictive Analytics

Forsta offers predictive statistical analysis based on regression, as is best practice. To support your organizations' need for real-time insights, all predictive analysis performed through Forsta can be conducted in near real-time and analysis can be run either as needed or at predefined intervals.

## Best Practice Use Case: Forsta's What-If Analysis










One of the most powerful predictive analytics techniques in business is an impact analysis. Devised using "what-if" functions applied to a regression analysis, you are able to determine the impact of change before you actually make the change – eliminating a significant amount of risk associated with making business changes blindly. Analysis like these can also make it easier to prioritize changes when resources are limited (and, let's face it – we all have limited resources).

### Consider this example of how you can use an impact analysis:

A company found that an increase in overall customer satisfaction results in an increase in revenue annually. With the goal of increasing revenue, they conduct an impact analysis to identify which aspects of the customer experience they need to improve to realize the highest revenue improvement.

"If I increase my customers' satisfaction with our billing process by +X%, I can improve the overall customer satisfaction by +X% which will increase revenue by +X%."

### Overall Satisfaction - 3.78

	Improvement Index	Current Score	Impact on Overall Satisfaction with 5% increase	New score: Overall Satisfaction
Field Sales		3.34	0.01	3.80
Ordering Process		3.91	0.01	3.80
Product Quality		4.03	0.01	3.80
Dealer Distribution		2.96	0.00	3.79
Customer Care		3.99	0.01	3.80
Warranty		3.99	0.00	3.79
Billing		3.90	0.00	3.79
Logistics		4.08	0.00	3.79
Technical Support		3.74	0.00	3.78

Predict the impact changes will have on your business



## Telling Your Data's Story

Now that you know more about analytics and how they can help you find deeper insights in your customer data, you need to think about what's next. Simply identifying insights is just not enough. Insights must be shared so they can be the driving force behind organizational improvements that drive Return on Investment. To achieve this, the insights you share must be:

- **Role-based and Real-time:** Ensure that those who consume the insights you provide are getting the information they need in real time – no more, no less. Too much data can be overwhelming, too little data doesn't drive organizational improvements, and old data is simply useless. Real-time, role-based reporting ensures that the right people have access to the information they need when they need it.
- **Interactive:** Provide high-level insights that allow your users to drill down to deeper detail. Encouraging users to explore the detail behind your insights will help them better understand the information you are presenting as it applies to their areas of influence.
- **Highly Visual:** It is imperative to make reports easy for your users to understand and compelling enough to drive action. Studies have shown that data visualization consistently improves understanding and is more likely to drive action than numbers alone.

There is no easier or more powerful way to achieve this than by leveraging highly visual, real-time, interactive, role-based dashboards. Dashboards make it easy to operationalize feedback to drive organizational changes that increase revenue, reduce costs, and promote culture change.

## DID YOU KNOW

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The best companies make sure everyone in the organization has access to customer feedback through dashboards that correlate feedback with pertinent KPIs.



# Here's How Forsta Can Help!

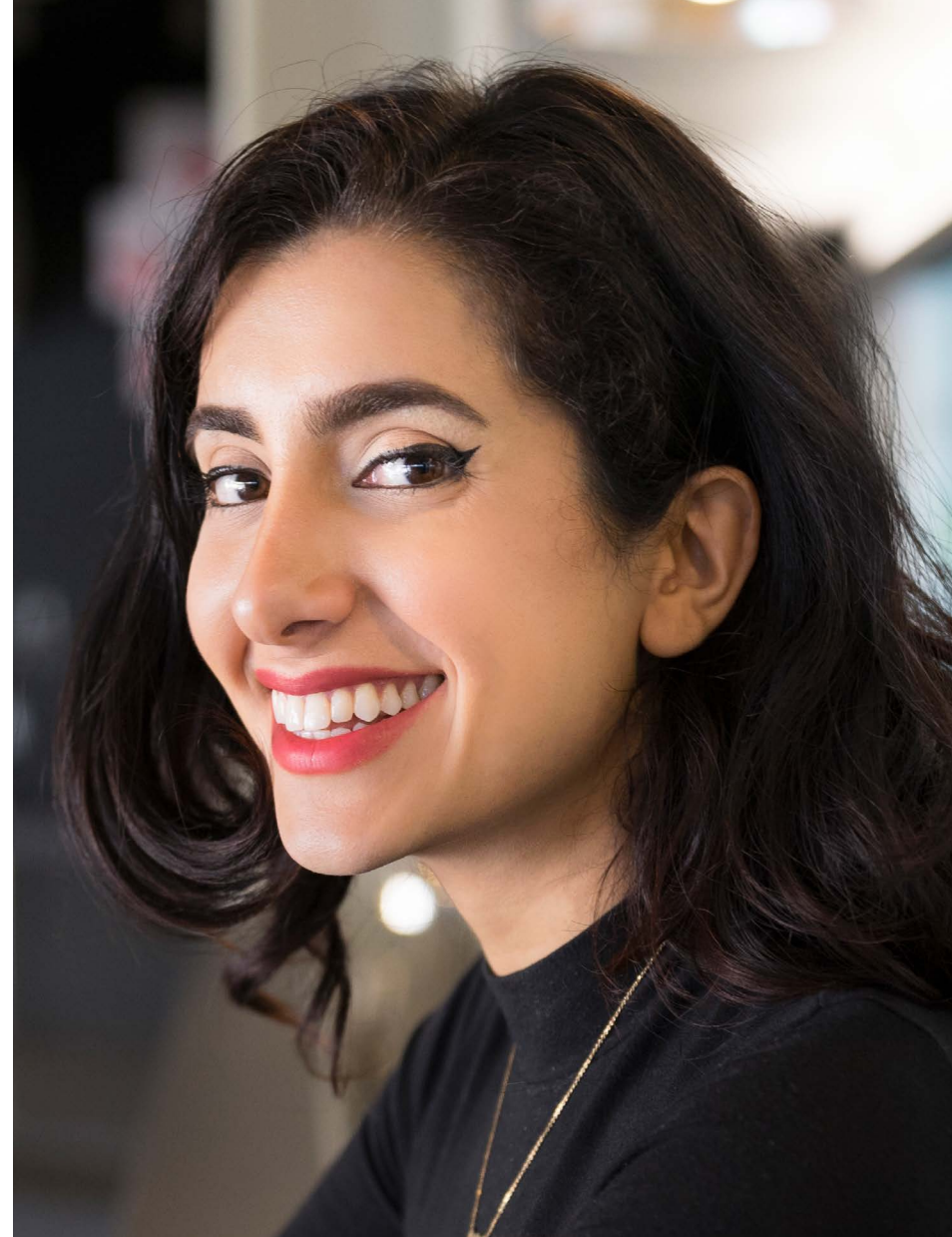
## Forsta's Approach to Reporting, Dashboards, and Visualization

Forsta's comprehensive reporting and action suite provides organizations with access to everything they need for reporting, data visualization, dashboarding, and alerting on all of the statistical analysis you conduct, whether basic, advanced, or predictive.

1. Modules such as Instant analytics, active dashboards, and discovery analytics are easy-to-use, scalable, out-of-the-box solutions that support fundamental reporting and data exploration needs.
2. Forsta is a wholly customizable reporting, dashboarding, and portal development platform for clients who need an extremely powerful tool that will let them slice, dice, and visually display data in unique ways.
3. Forsta watches the results for you, assigns issues, notifies the correct department or individual, and allows you to report on the company's case load and ROI.

**Using our range of modules, you can:**

- Realize excellent ROI from your feedback and research efforts
- Reduce the time, cost, and complexity associated with analysis
- Break down the data silos that prevent your organization from achieving results
- Deliver business insights faster, directly to those who need it
- Engage more people across your business
- Drive immediate corrective actions based on the insights uncovered.





# Getting Started

Hopefully this eBook has helped you understand the value analytics can provide to your organization. As you've seen here, your data should tell a compelling story explaining what happened, why it happened, how you can fix it, and what happens next.

Admittedly, analytics can seem a bit scary for those who are not statistically or mathematically inclined. But Forsta can help you with every technique you've read about in this eBook! Having served as the technology leader in Market Research for over 20 years, we're well positioned to support your analytics needs, whether they are basic, advanced, or predictive.

Not sure where to start? Call us! While our state-of-the-art Voice of the Customer, Voice of the Employee, and Market Research Platform is quite impressive, we're much more than just a software provider. Forsta's consultants have over 80 years cumulative experience helping organizations just like yours build and grow customer experience programs that result in tangible Return on Investment.



And that's not just an idle claim. We can prove it! We recently worked with Forrester Consulting to analyze the total economic impact that Forsta has on its customers. The results of the study were compelling – proving that Forsta delivers a true Return on Investment for companies just like yours!









Growing Smarter Together

Forsta is the world's leading provider of Experience & Research Technology, working together with our clients to help them discover, understand, and share human-centered insights packed with real action potential.

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