Create Strategy, Implement and Manage a Solution for Big Data for Your Organization

Big Data Consulting Services and Big Data Transition Services from Hitachi Data Systems provide enterprises with a strategic plan, solution architecture, and successful implementation of big data solutions. We analyze your current big data capabilities and develop a comprehensive business plan and architecture to help you attain your future big data vision. Our “Live in 5” approach implements a tangible solution to deliver new business insights quickly.

Overview

Big data solutions can enable better decision-making, provide deep insight into numerous business facets, and spur innovation across the enterprise. To maximize the benefits of big data, enterprises must develop a strategy and choose big data solutions that are best suited to the organization’s needs, priorities and resources.

Today’s competitive landscape calls for a new type of decision-making based on insight you cannot obtain in traditional ways. Your business requires a new generation of tools and appliances to enable enterprises to get more from big data than ever before. Which data yields the most value depends on your business. Here is a sampling of what other companies are learning from big data.
Online retailers and Web properties are using behavioral data to recommend products.

By analyzing text on social networking posts, companies are honing brand recognition, discovering what customers want, and even detecting fraud.

Financial institutions are scoring potential clients for risk through the analysis of transactional data.

Machine-to-machine data is helping diagnose bottlenecks in IT departments and improving operational efficiencies in the transportation and manufacturing industries.

Hitachi Data Systems understands that big data solutions are about much more than technology. Successful big data solutions give you the ability to leverage information to drive effective decision-making across the enterprise. Hitachi Data Systems offers Big Data Consulting Services and Big Data Transition Services to help you define a big data strategy, implement a big data solution, and deliver rapid results.

To show tangible results with our Big Data Transition Services, we quickly implement a defined use case. With those results, we give your business and technology leaders the clarity and confidence to justify and successfully implement your big data strategy.

Challenges
Each organization faces unique challenges in implementing big data solutions. Moving from a vision for big data to implementing big data solutions can be difficult without experience and a proven methodology. Services from HDS for big data give you a strategy to identify and overcome the specific challenges in your organization, such as:

- Not knowing where to begin.
- Prior unsuccessful big data solutions due to a number of factors.
  - Limited tools.
  - Extremely large or complex data sets.
  - Excessive processing time.
  - Internal teams not prepared (lack of skills and understanding of big data technology tools).
  - Market return not realized.
  - Difficulty in interfacing big data solution with the enterprise data warehouse.
- Limited internal knowledge and expertise on big data architectures and technologies.
- Lack of a proven, reliable strategy for successful solution implementation.

In our Big Data Consulting Services, we define an analytics reference architecture by analyzing your technology tools and infrastructure to identify and overcome the challenges in your organization. In the Big Data Transition Services, HDS consultants use our Live in 5 approach to create and implement a big data solution. The solution addresses a specific use case and drives immediate, tangible benefits.

HDS Services for Big Data: Meet Today’s Storage Challenges With HDS
Hitachi Data Systems provides comprehensive services to help you plan, design, implement and manage big data solutions. We have defined a number of capabilities for big data. These abilities range from strategy and architecting to prototyping and hosting. They create a lifecycle approach, assisting you throughout your projects as well as in support of your overall strategy for big data. Figure 1 illustrates those capabilities.

Big Data Consulting Services From Hitachi Data Systems
The Big Data Consulting Services from HDS consist of the capabilities identified in the Consult section of Figure 1:

- Analytics Strategy.
- Analytics Solution Evaluation and Return on Investment (ROI) Analysis.
- Analytics Reference Architecture.

The key activities for these capabilities are:

- Current environment assessment, which reviews the current analytics strategy, applications, source data, dashboards, infrastructure and associated management processes.
- Future environment design, which defines the business requirements, target big data solution, architecture and use cases.
- Gap analysis, which identifies gaps, risks and opportunities.
- Strategy recommendation, which identifies big data initiatives and summarizes strategy recommendations into a comprehensive big data strategy plan with an implementation roadmap.

Figure 1. The Hitachi portfolio of services for big data supports the lifecycle of engagements, from consulting to transition to management.

Analytics Strategy
Hitachi Data Systems uses a proven framework to survey 7 critical components to determine the strategic readiness of your organization. Our approach is a strategy-driven methodology that delivers the right technical architecture to meet your business needs. We survey:

- Strategy. Are the high-level objectives clearly described?
- Process. Are the core processes effective and efficient?
- Metrics. Is the right mix of measures utilized?
- Data. Is the data required to support decision-making available?
- Applications. Does software enhance your core processes?
- Architecture. Do you have the right infrastructure in place?
- People. Do you have the right people and organizational capital in place?

Figure 2 illustrates the project phases for developing a strategy for you.
Analytics Solution Evaluation and ROI Analysis

Big data success involves more than just the right technology infrastructure. You must identify which big data solutions bring the most benefit to your business. Hitachi Data Systems evaluates solutions and develops an ROI analysis. We utilize a proven process to identify the big data solutions that make the most sense for your organization. HDS consultants working with your team identify, prioritize and provide business justification for big data solutions tailored specifically to your organization.

Consultants from Hitachi Data Systems:

- Interview leaders across your organization to identify big data solutions and industry-specific opportunities.
- Prepare a slate of big data solution candidates for evaluation and ranking.
- Evaluate the feasibility and strategic fit of the candidate solutions for possible implementation.
- Facilitate selection of one or more solutions for implementation.
- Develop business requirements, an implementation plan, and a business case to justify the implementation of the selected solutions.

Analytics Reference Architecture Design

Hitachi Data Systems brings our technical leadership in storage solutions to your big data vision. We ensure that you have the tools and infrastructure you need make your big data solution a success.

- Discover tools. We examine your big data solution requirements and conduct interviews with business and technical experts in your organization. In this way, we help identify the technology tools to use in building your big data solution.
- Organize and design. We validate the fitness and confirm the capabilities of the selected tools, and then propose a reference architecture on which your big data solution can be built.
- Schedule and plan. We gather information on scheduling, costs and sponsorship, and develop a technology implementation plan.
- Build consensus. We conduct review meetings with key stakeholders focused on gaining consensus and ensuring a clear understanding of the reference architecture and your big data solution.

5 Steps to Results

In our services, we perform a defined set of activities that have proven to have tangible results starting in 6 weeks. Those major activities are:

- Define measurable outcomes for clickstream analytics, equipment or device log analytics, and social sentiment analysis use cases.

Innovation is the engine of change, and information is its fuel. Innovate intelligently to lead your market, grow your company, and change the world. Manage your information with Hitachi Data Systems.
Define relevant sources for data types:
- Machine-to-machine, in-memory analytics, real-time streaming, data warehouse and legacy data (RDBMS), and click-stream data.
- Define preferred tool for data visualization.
- Develop reports and dashboards of each use case.
  - Implement and integrate Hitachi prototype platform for big data analytics.
  - Execute project management and use case.
- Present financial model for big data solution and use case review. Gain agreement of and sign off for use case outcomes and deliverables with management.

With our Live in 5 approach, Hitachi Data Systems solves the problems of where and how to start with analytics. Live in 5 offers a quick and easy way for your business to test drive big data analytics and get back business-specific results. In this proof of concept (POC) approach to analytics, we provide the hardware, software and professional services to get you **up and running quickly**.

As our consultants proceed through the above activities, they focus on 5 areas as described below. Together, the steps and the focus areas create our Live in 5 approach.

### 5 Focus Areas

**Phases**

We use a 5-phase process to turn data into actionable information. We teach you how to conduct each phase, as shown in Figure 4.

**Many Data Types**

Our consultants work with you to identify worthwhile objectives for your business, and then perform high-speed analytics on the most appropriate of these 5 data types:
- Sensor-generated machine-to-machine data.
- In-memory analytics.
- Real-time streaming data.
- Historical data in traditional relational database and management systems (RDBMS).
- Click-stream data (data and end user clicks during Web browsing).

**Analytical Skill Sets**

Our Live in 5 deployment team includes a project manager, solution architect, functional analyst, and technical architect. These experts use a wide range of skill sets:
- Hadoop and NoSQL (programming frameworks that support the processing of large datasets).
- Analytics search.
- Real-time analytics.
- Complex event processing (CEP).
- Predictive modeling.

**Measureable Outcomes**

We apply our tools to your objectives and return as many as 5 outcomes in the following use case scenarios:
- **Recommendation engine** introduces Web users to targeted products and services based on the Web user’s profile and online behavior.
- **Sentiment analysis** analyzes text in social networking posts to determine what end users are saying about your company, products and brands.
- **Risk modeling** determines financial exposure, prepare what-if scenarios based on simulated market behavior, or score a particular client for risk.
- **Network monitoring** (logged analysis) improves operational efficiency, supply chain efficiency and asset management with sensor-generated data and predictive analytics.

**ROI-Based Recommendations**

We develop an ROI model for each outcome we obtain and use that information to form recommendations. Any one outcome could deliver results that warrant a strategic change in some aspect of your business.

**Long-Lasting Benefits of Big Data Transition Service and the Live in 5 Approach**

At the end of the engagement, your organization has:
- A Hitachi Data Systems deployed Hadoop platform.
- A good understanding of the 5 phases for big data analytics.
- Tailor-made dashboards for one of the use case scenarios.
- Financial model for big data solution, typically a ROI model.
- Hands-on training tailored to capability gaps and technology to accelerate your learning curve.

Upon completion, you possess new and powerful information about your business that could lead to greater cost efficiency and a stronger decision-making process. The specialized intellectual property and analytics tools we create for you in the course of data interpretation, such as the dashboard visualization layer, are yours to keep: At the end of Live in 5, you keep the tools as well as associated learning, techniques and run books.

**Summary**

Big data solutions can enhance decision-making, increase productivity, and help spur innovation across the enterprise. Big Data Consulting Services and Big Data Transition Services from Hitachi Data Systems benefit your organization by:
- Identifying big data opportunities with business teams across the organization.
- Defining current internal capabilities for big data.
- Creating a plan to close technology, skills gaps, and data gaps.
- Providing thought leadership in advancing your organization to greater maturity in big data solutions.
- Preparing your business team to leverage big data results.
Facilitating selection of the solution that provides the most benefit and rapid return on investment.

Evaluating and proposing big data tools.

Formalizing reference architecture.

Developing a plan for technology implementation.

Implementing a prototype for a specific use case within a defined timeframe, including the use case definition, business case, infrastructure technology, and big data tools deployment.

Delivering big data insights and reporting functionality from the prototype for ongoing big data analysis and reporting.

For More Information
For more information regarding our Big Data Consulting Services and Big Data Transition Services and how they can help you innovate with information, please contact your Hitachi Data Systems representative or visit www.HDS.com/services.

BIG DATA TRANSITION SERVICES: FINANCIAL SERVICES COMPANY CASE STUDY

Here is an example of how one large financial services company used Big Data Transition Services from Hitachi Data Systems. The company created and now maintains a stable electronic trading (e-trade) environment, which supports higher uptime and more trades.

Financial Services Company Uses Historical Trending to Support E-Trading
A large financial services company used our Big Data Transition Services Live in 5 approach to improve application uptime and increase trading opportunities for its customers. We discussed several use cases for big data analytics with company stakeholders, including IT, network and system managers. To get the fastest return on investment, we recommended using a big data solution to improve insights gained from analysis of historical trending. This approach captures historical data in a time series and uses it to create troubleshooting and root cause analysis reports on devices within their e-trading environment. Measuring data at uniform hour, day, week, month and year intervals gives the company numerous ways to customize reports and make intelligent decisions on where to improve operational efficiency.

To support historical trending goals, our analytics solution ingested, analyzed and displayed log data collected from server, database, network, application and load-balancer sources. We mapped the flow of data sources and determined how to visualize the data so administrators could pinpoint risks and exposures. They now predict their e-trade application function levels in future timeframes. Next, we deployed the appropriate architecture, including Hitachi servers. We implemented the Hadoop Distributed File System to store large file systems over multiple machines, Tableau 8 software for visualization, and ElasticSearch for search and indexing. Finally, we provided mentoring on performance and query tuning.

From start to finish, the proof of concept took approximately 9 weeks. Administrators gained the freedom to create the reports they needed most. The new reporting tools changed the time involved in fulfilling a report request from a day-long endeavor to a matter of minutes with real-time information and improved visualization. By efficiently monitoring their e-trade environment and resolving potential system problems, the financial services company became well positioned to improve their customers’ trading experience and keep downtime to a minimum.