BIG DATA
The Catalyst For Transformation

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What's Driving The Data Deluge?

Mobile Sensors

FACEBOOK UPLOADS
300 MILLION
PHOTOS EACH DAY

Social Media

Video Surveillance

Video Rendering

READING SMART METERS
EVERY 15 MINUTES IS
3000X MORE
DATA INTENSIVE

Smart Grids

OIL RIGS GENERATE
25000
DATA POINTS
PER SECOND

Oil Exploration

Medical Imaging

COST TO SEQUENCE
ONE
GENOME
HAS FALLEN FROM
$100M IN 2001
TO $10K IN 2011

Gene Sequencing

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Big Data Is In Every Industry

Financial

Telecom

Retail

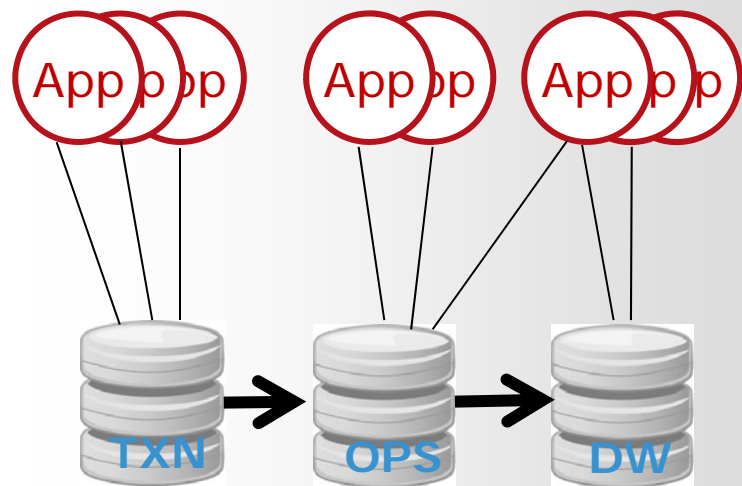Energy

Insurance

Government

Healthcare

Cyber Security

Advertising

Gaming

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Fundamental Shifts For Big Data
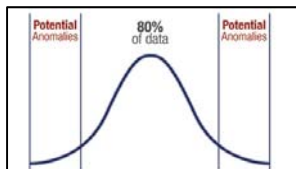

3 Real & Right Time Processing

2 Distributed Apps & Data

1 Big Data Sources

App op   App op   App op

TXN → **OPS** → **DW**

Transaction Data Sources
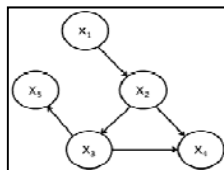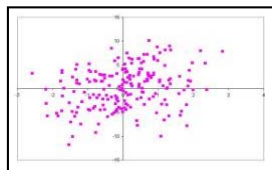
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Gaining Value From Big Data With Analytics

Anomalies

Correlations

Patterns

GOAL

Predictive

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Big Data Requires Data Science

New Approaches to Analytics

Data Science
- Predictive analysis
- What if.....?

Business Intelligence
- Standard reporting
- What happened?

High

BUSINESS
VALUE

Low

Past

TIME

Future

Data
Science

Business
Intelligence

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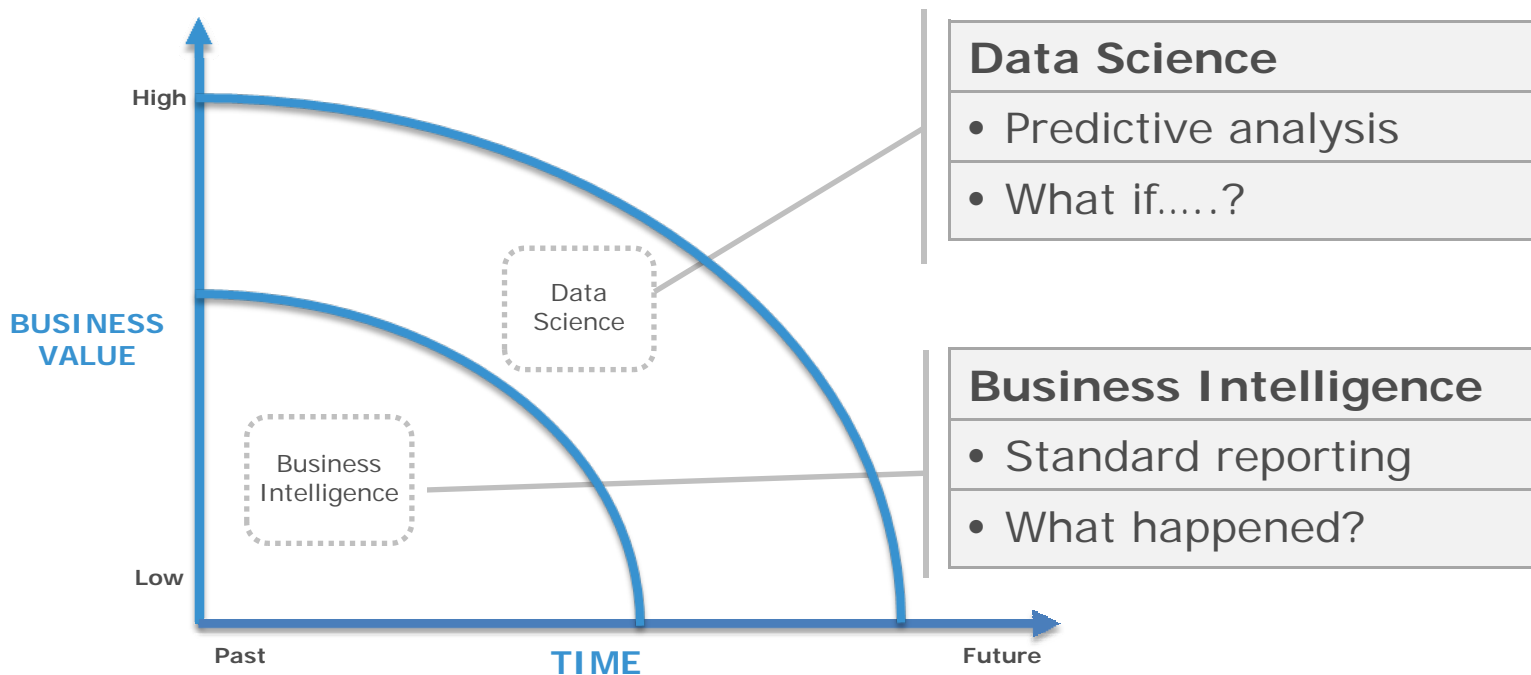
What Data Scientists Do

Key Functions Of The New Big Data Ecosystem

Analytical Talent

Technical Talent

Subject Matter Expertise

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Big Data Transformation Use Cases

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Situation Overview: Fraud, Waste, and Abuse

$8B — Improper unemployment payments

$450B — Difference between taxes owed and paid

$40B — Conservative estimate of Medicare-Medicaid fraud

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Reduce Fraud, Waste, and Abuse with Big Data

- Analyze and correlate multiple data sets across agencies

- Build user profiles and spot anomalies based on demographics and location

- Integrate identity and eligibility verification technology into the process

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Identify Fraudulent Childcare Applications

Based on travel times, which applications for childcare subsidies look suspicious?
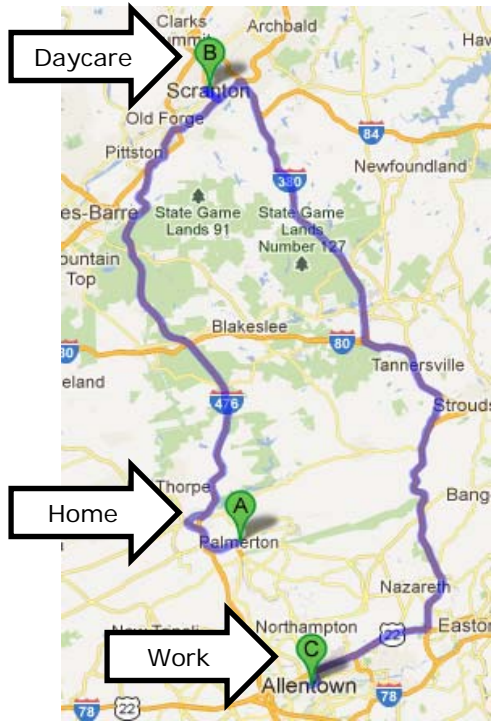

Daycare

Home

Work

- A to B is a 55 mile drive from the applicant's home to daycare

- B to C is a 72 mile drive from daycare to the applicant's workplace

- Why would a parent who lived in Palmerton, worked in Allentown, enroll in daycare as far as Scranton?

- This case merits further investigation
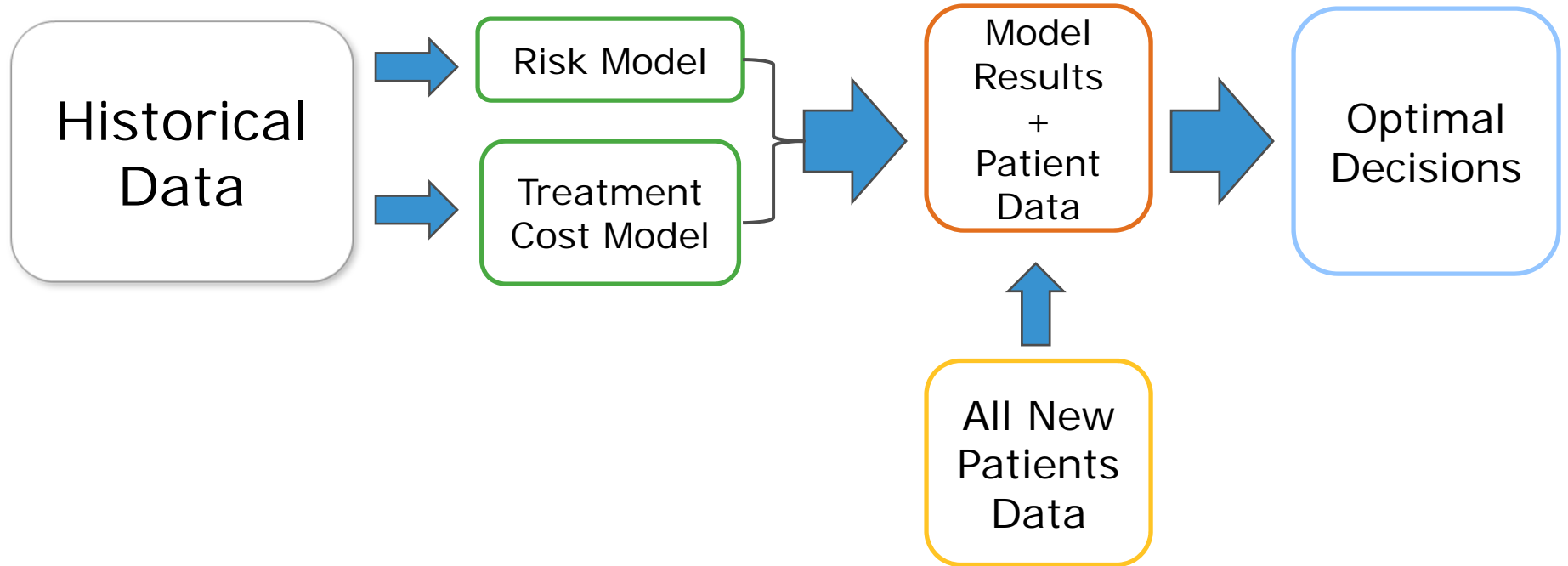
Source: Deloitte Consulting

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Reduce Healthcare Costs

How do we reduce hospital-acquired infection costs?

High-Risk Patient → Admitted 24hrs Prior To Surgery → Administer Treatment
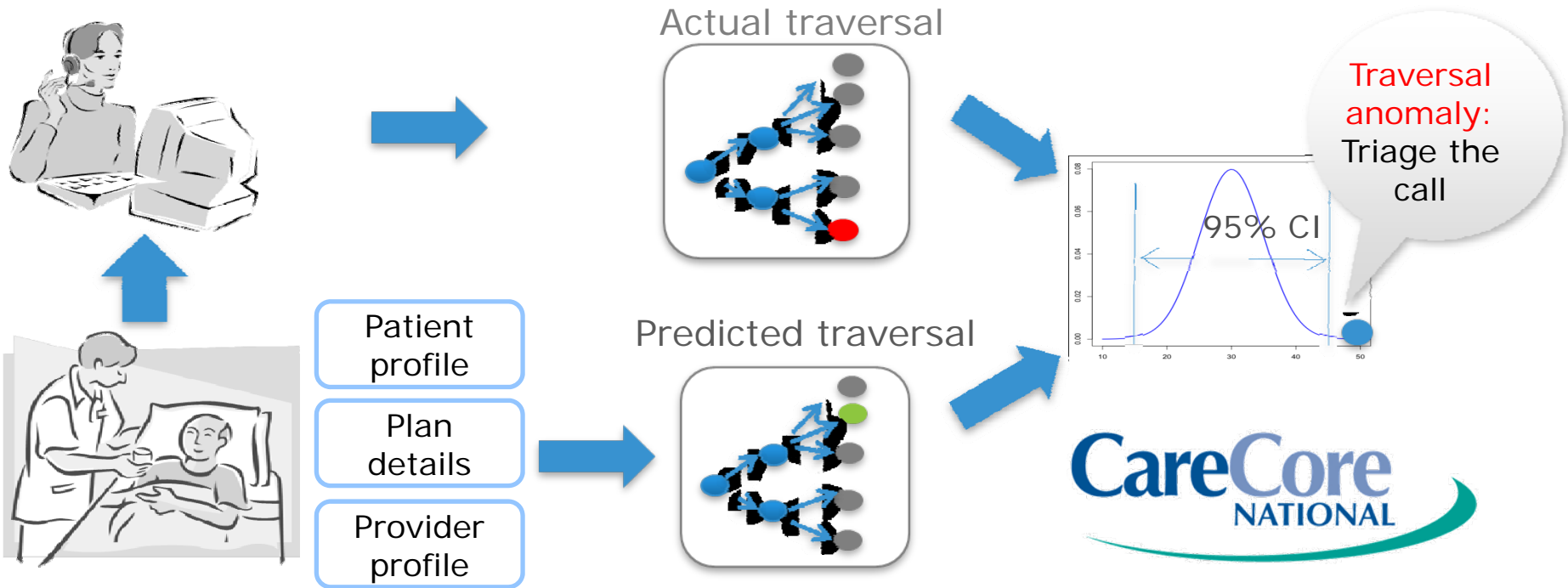
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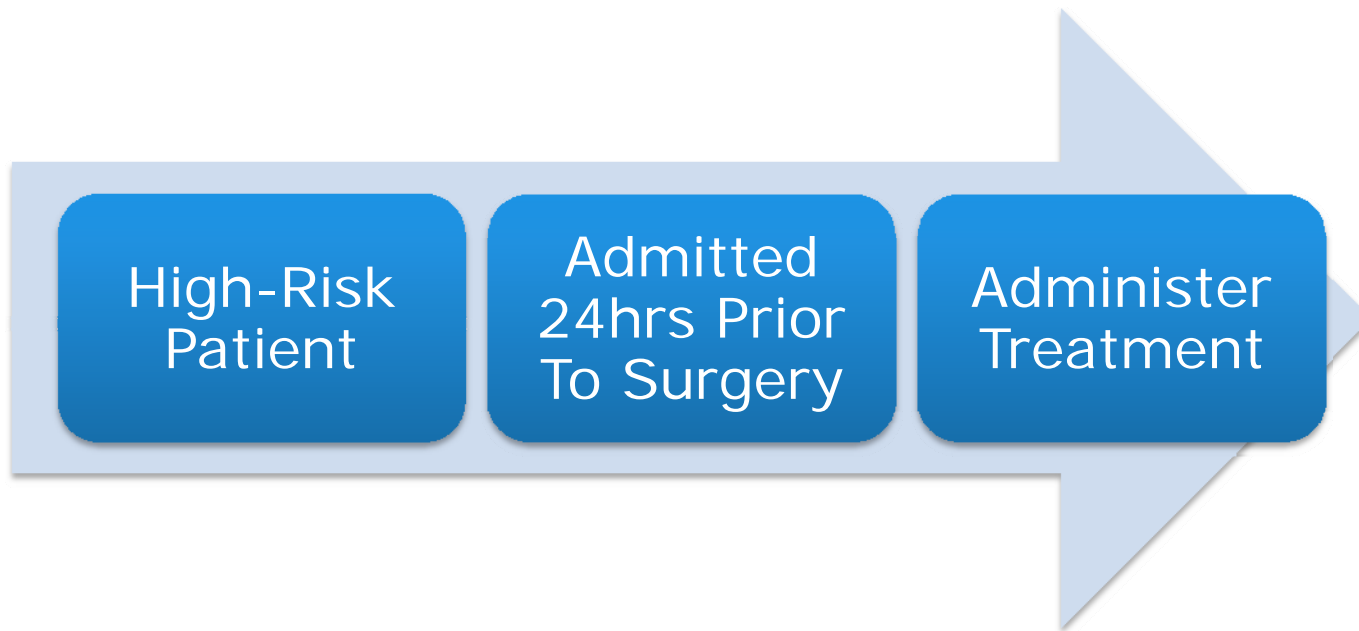
Model For Optimizing Patient Management

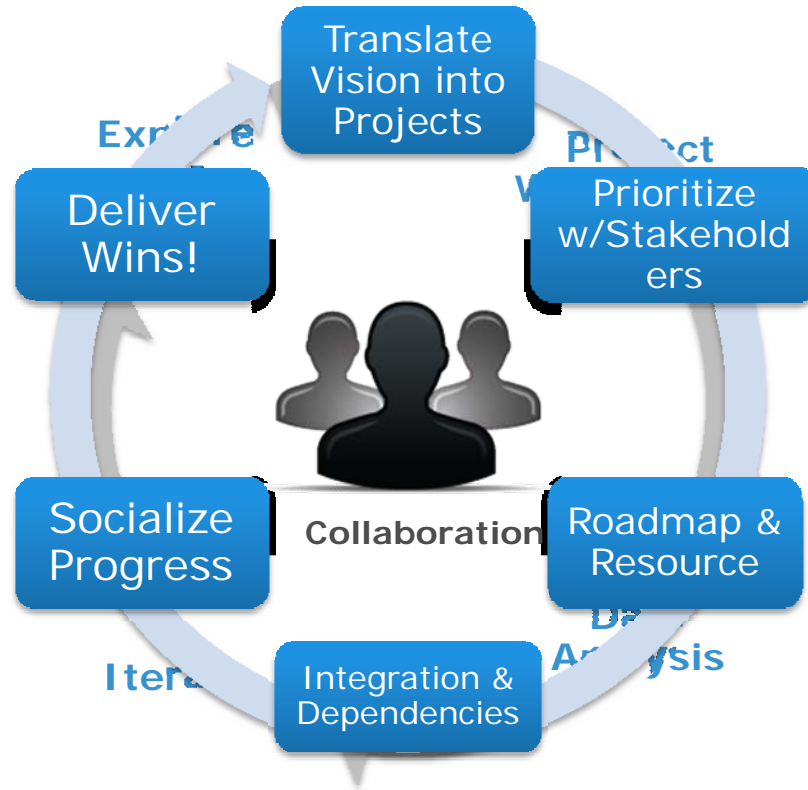What is an optimal strategy for choosing patients and minimizing treatment costs?

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Big Data Drives Health Treatment Efficiencies

Question: How do we improve the patient treatment process?

Actual traversal

Predicted traversal

Patient profile

Plan details

Provider profile

Traversal anomaly: Triage the call

95% CI

CareCore NATIONAL

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Big Data Process & Change Management

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Summary

1 Big Data Is A Transformation Catalyst

2 The Approach To Big Data is Different

3 Success Requires Focus on Technology, People and Process

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THANK YOU

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