#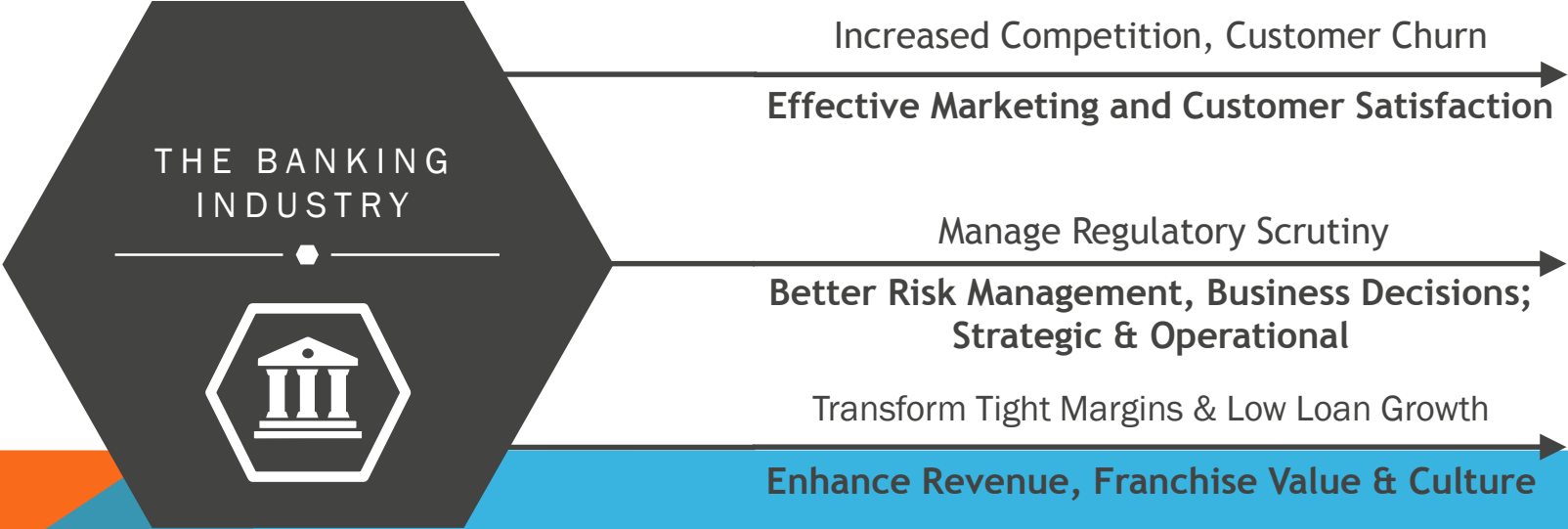 Large banks have built "Next Product to Buy" capabilities to predict customer need, pushing up to 60% of their sales of some products

LOWEST BANK   AVERAGE   HIGHEST BANK

Savings Account — Capital One
Credit Card (primary) — Citibank
Home Mortgage — JP Morgan Chase
Home Equity Line of Credit — Wells Fargo
Wealth Management/Investment Products — Bank of America

0   10   20   30   40   50   60   70   80

▷ **Most successful bank for each product is top 5 bank who has invested in analytics**

▷ Instead of waiting for consumers to come to them, larger banks are aggressively predicting needs

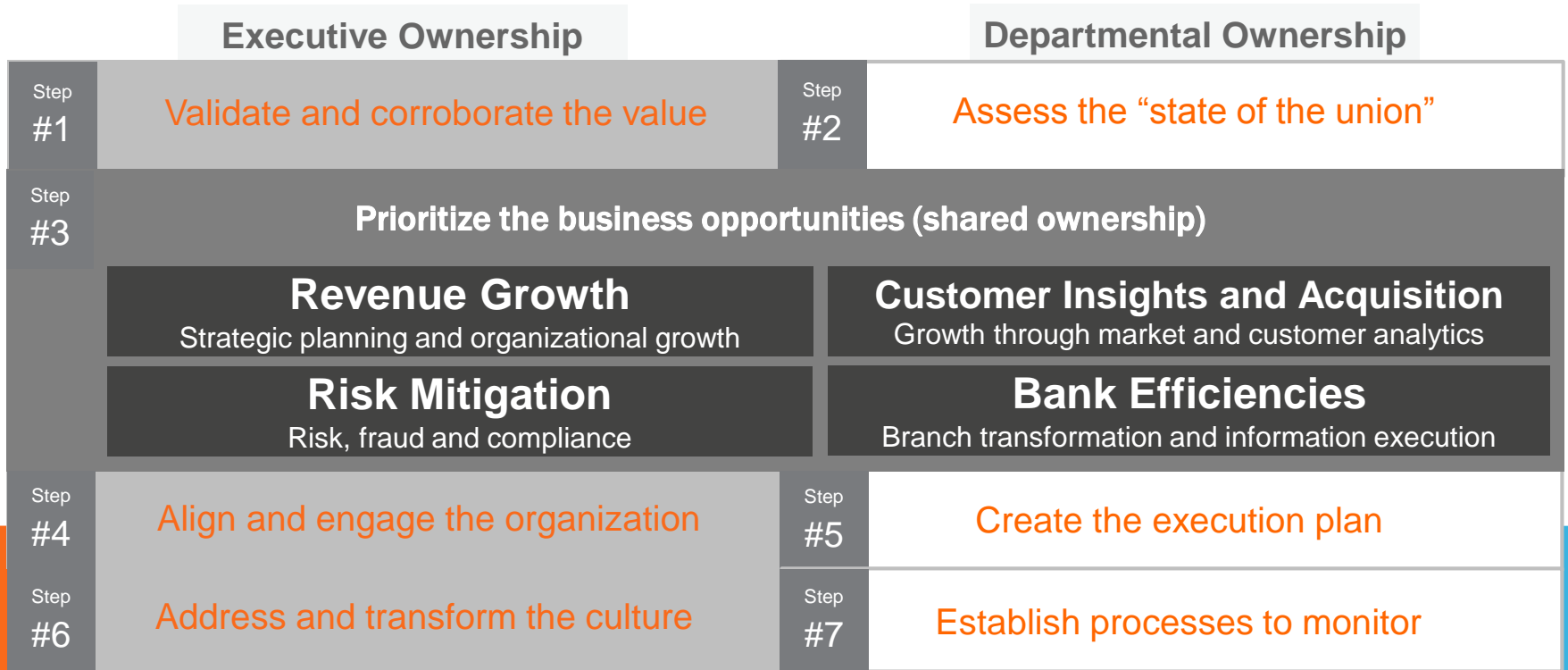▷ Helps larger banks capture a larger share of the 50% of consumers who added a financial product in 2015

SOURCE: US Banking Product Survey, 2014

DATA ANALYTICS – THE NEW COMPETITIVE ADVANTAGE TURN CHALLENGES INTO TRIUMPHS

THE BANKING INDUSTRY

Increased Competition, Customer Churn

Effective Marketing and Customer Satisfaction

Manage Regulatory Scrutiny

Better Risk Management, Business Decisions; Strategic & Operational

Transform Tight Margins & Low Loan Growth

Enhance Revenue, Franchise Value & Culture

SEVEN-STEP PROCESS
EXECUTIVE AND DEPARTMENTAL PARTNERSHIP IS KEY

Executive Ownership

Departmental Ownership

| Step #1 | Validate and corroborate the value | Step #2 | Assess the "state of the union" |

Step #3 — **Prioritize the business opportunities (shared ownership)**

Revenue Growth
Strategic planning and organizational growth

Customer Insights and Acquisition
Growth through market and customer analytics

Risk Mitigation
Risk, fraud and compliance

Bank Efficiencies
Branch transformation and information execution

| Step #4 | Align and engage the organization | Step #5 | Create the execution plan |
| Step #6 | Address and transform the culture | Step #7 | Establish processes to monitor |

Become a Data Driven Organization, Fiserv, Inc. 2016

Prioritize the Business Opportunities

Grow Revenue
Strategic Planning and Organizational Growth

Organizational Growth
- ❑ Commercial Product and Pricing Review
- ❑ Deposit Product and Pricing Optimization
- ❑ Enterprise Execution Monitoring
- ❑ Lending Growth/Cross-Sell Analysis
- ❑ Non-Interest Income Assessment
- ❑ Peer Performance and Benchmarking

Risk Mitigation
Risk, Fraud and Compliance

Managing Risk, Fraud and Compliance
- ❑ ALLL Evaluation
- ❑ BSA Best Practices Review
- ❑ Compliance Best Practices Review
- ❑ Credit Risk Assessment
- ❑ Customer Delinquency Services Review
- ❑ Fraud Rule Review
- ❑ Risk Analysis and Scorecarding
- ❑ Vendor Management Optimization

Customer Insights and Acquisition
Growth Through Market and Customer Analytics

New Market Assessment
- ❑ Strategic Research for New Markets
- ❑ Alternative Lending
- ❑ Prepaid Cards
- ❑ Unbanked/Underserved Market

Expand Market Share
- ❑ Marketing Strategy Review
- ❑ Mergers and Acquisition Opportunities
- ❑ Small Business & Consumer Surveys
- ❑ Wealth Management

Organically Grow Wallet Share
- ❑ Campaign Management Planning
- ❑ Channel Adoption Analysis
- ❑ Consumer Acquisition Strategies
- ❑ Customer Erosion & Attrition Analysis
- ❑ Customer Wallet Share Analysis
- ❑ Profitability Analysis
- ❑ Social Media Engagement Strategies
- ❑ Small Business Growth Opportunity
- ❑ Top of Wallet Review
- ❑ Treasury Services

Bank Efficiencies
Branch Transformation and Information Execution
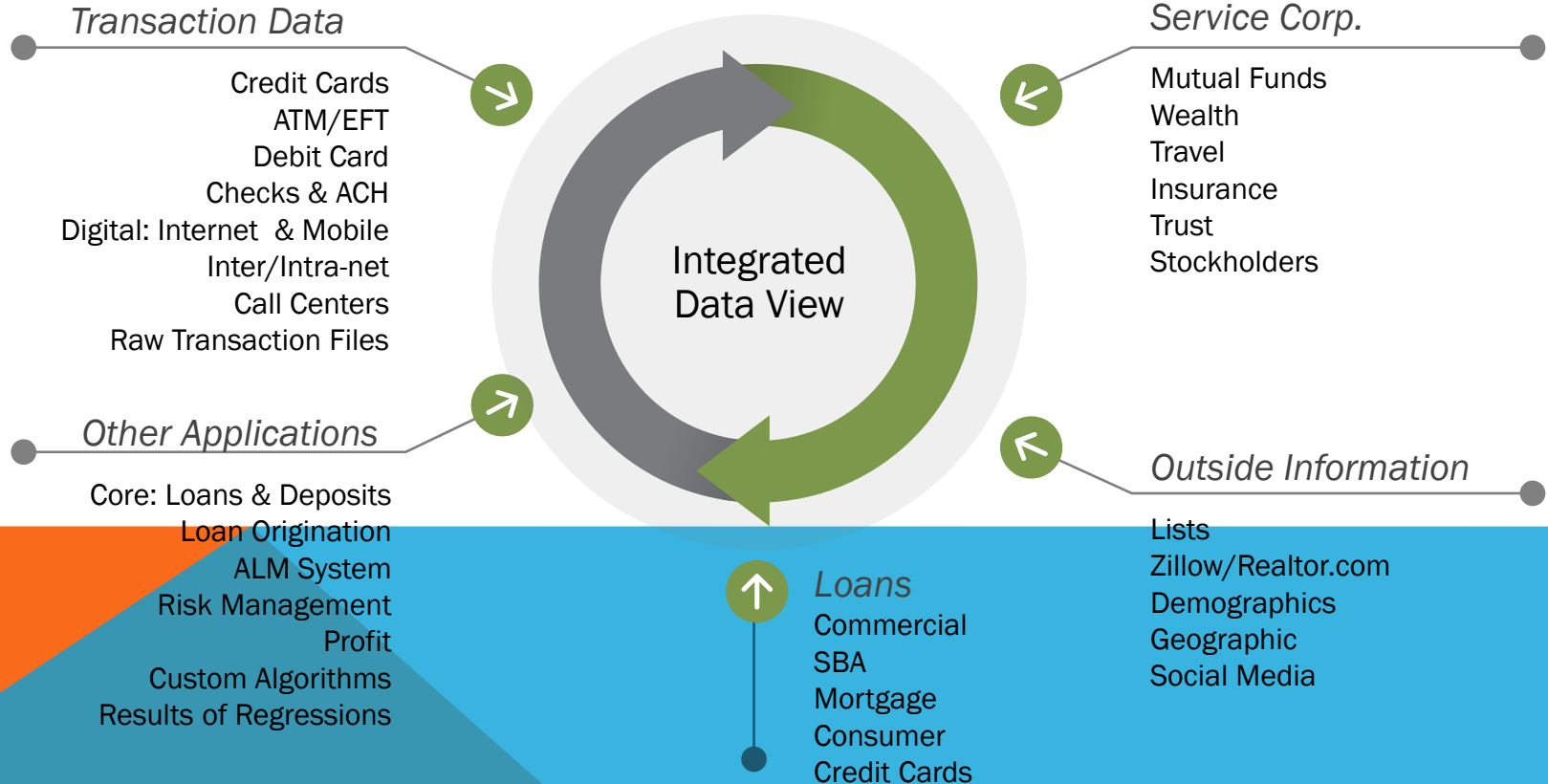
Efficiency Opportunities
- ❑ Back Office Operational Efficiency
- ❑ Branch Transformation
- ❑ Branch Network Optimization
- ❑ Branch Process Efficiency Review
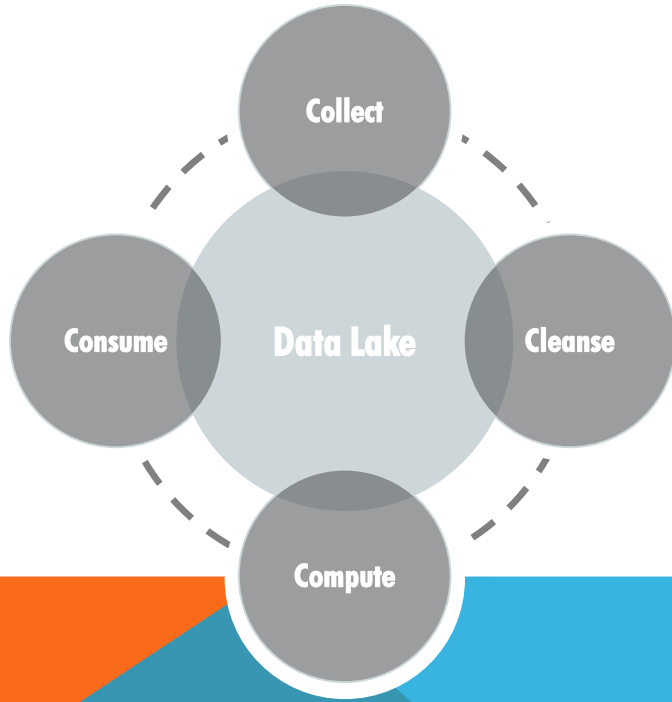- ❑ Staff Optimization Review

Data-Driven Execution Initiatives
- ❑ Big Data Roadmap
- ❑ Business Intelligence Efficiencies
- ❑ Governance and Trusted Data
- ❑ Data Warehousing Strategies
- ❑ Predictive Analytics
- ❑ Flexible Scheduling

SINGLE SOURCE OF TRUTH MAY BE THE GOAL– BUT FOCUS ON IMMEDIATE ROI

Data Processors

Transaction Data
Credit Cards
ATM/EFT
Debit Card
Checks & ACH
Digital: Internet & Mobile
Inter/Intra-net
Call Centers
Raw Transaction Files

Service Corp.
Mutual Funds
Wealth
Travel
Insurance
Trust
Stockholders

Other Applications
Core: Loans & Deposits
Loan Origination
ALM System
Risk Management
Profit
Custom Algorithms
Results of Regressions

Integrated Data View

Loans
Commercial
SBA
Mortgage
Consumer
Credit Cards

Outside Information
Lists
Zillow/Realtor.com
Demographics
Geographic
Social Media

THE 4 C'S

Collect: A single source of the truth from multiple silos of data

Cleanse: Resolve inconsistencies in data, relate data from multiple structures and systems

Compute: Profit, Primary Checking Algorithm, Retention Measure, LTV (from Zillow ZEstimate or Realtor.com), # of products per customer, algorithms for alerts (possible attrition in an important customer range, risk alerts).

Identify data segments to assist lines of business achieve strategic goals: Mortgage no HELOC, CD but no credit products, Small Business & Commercial loans maturing in next 4-6 months (Above WAR, Below WAR (profitable vs. unprofitable), high number of checks – no positive pay.

Income as a proxy, regression results back to segmentation, unique algorithms and unique by "market"

Consume: How the information is presented and used

TAKING ACTION

Channel

- Digital (e-mail, internet banking, mobile, etc.)
- In Branch
- Traditional (print, stuff, mail)
- Call Center
- In-Person / Officer Contact

Message

Many opinions regarding what offer to make, how to deliver message, offer coupon or make special offer, limited time only, etc.

Time & Approach

When does specific channel and message combine to generate success?

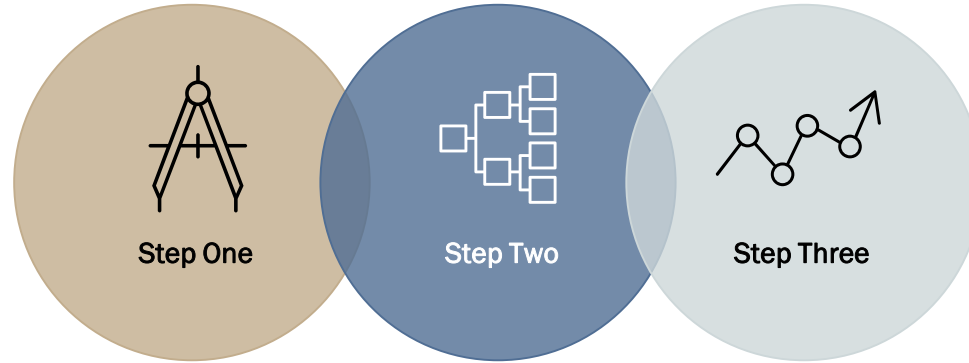Through whom?

Time of year?... 2 days, 2 weeks, or 2 months into the customer's relationship?

Results Feedback

Information from Digital Channels, CCM, CRM, Call Center, spreadsheets, etc. provide crucial information for assessment

ADVANCED ANALYTICS METHODOLOGY
Building Recurring Best Practices

Step One

Step Two

Step Three

4C Foundation

Identify data segments of "untapped potential" or opportunity that help achieve specific strategic goals *(service, risk, growth, profit, retention)*

Taking Action

Action for each Opportunity via a specific message, channel(s), and time
(Consider call center action vs. digital channel vs. traditional marketing vs. control group)

Measure

Define Success & Costs = ROI hurdle
Measure
Track
Adjust

Build recurring best practices . . . right segment, right customer, right message at the right time

ADVANCED ANALYTICS METHODOLOGY
Building Recurring Best Practices

Feedback Loop 1: Adjust & Repeat

Actions that perform over ROI hurdle while refining to "best" action: *channel, message, and approach*

Feedback Loop 2: Human Element

Identify best performers—use Learning Organization Theory to educate and lift performance of team
Entrepreneurial Spirit?

Feedback Loop 3: Specific Algorithms

Profit, Household, Next Product Model, Loyalty Measure, Primary Checking, number of Products per Customer, etc. New filters are applied and analyzed for further segmentation

Feedback Loop 4: Regression

Via Random Forests or Binary Logistic Regression—identify characteristics (products, services, trans, income, credit score, and other variables)—identify sub-segments with higher probability of success and adjust

Feedback Loop 5: Regression Results lead to Refinements

Modify algorithms for unique characteristics of FI economy, products, market, customers

Feedback Loop 6

Align incentives to best Actions