

# Enterprise Data Management Demand and Challenges: A System z Perspective

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## Enterprise Data Management Challenges

- Based on recent survey data

## IDC's Four Pillars

- Mobile, In-Memory, Cloud, Big Data

## Emerging Architectures

- Addressing the needs of smart, agile enterprises

## Implications for System z

- The mainframe role in this architecture

## Conclusions/Recommendations

# Enterprise Data Management Challenges

## Rapid Data Growth

- New kinds, mixed forms
- Need to glean value from mounds of unorganized data

## Competitive Pressure

- Pace of business is accelerating
- Adoption of Big Data creates a data “arms race”

## Accessibility of data

- Proliferation of smart mobile devices
- Demand for devolution of data access to user control

## Legal and Regulatory Issues

- More data can mean more liability
- Data searches that can provide relevant results must do so.

# Enterprise Data Management – Drivers and Inhibitors

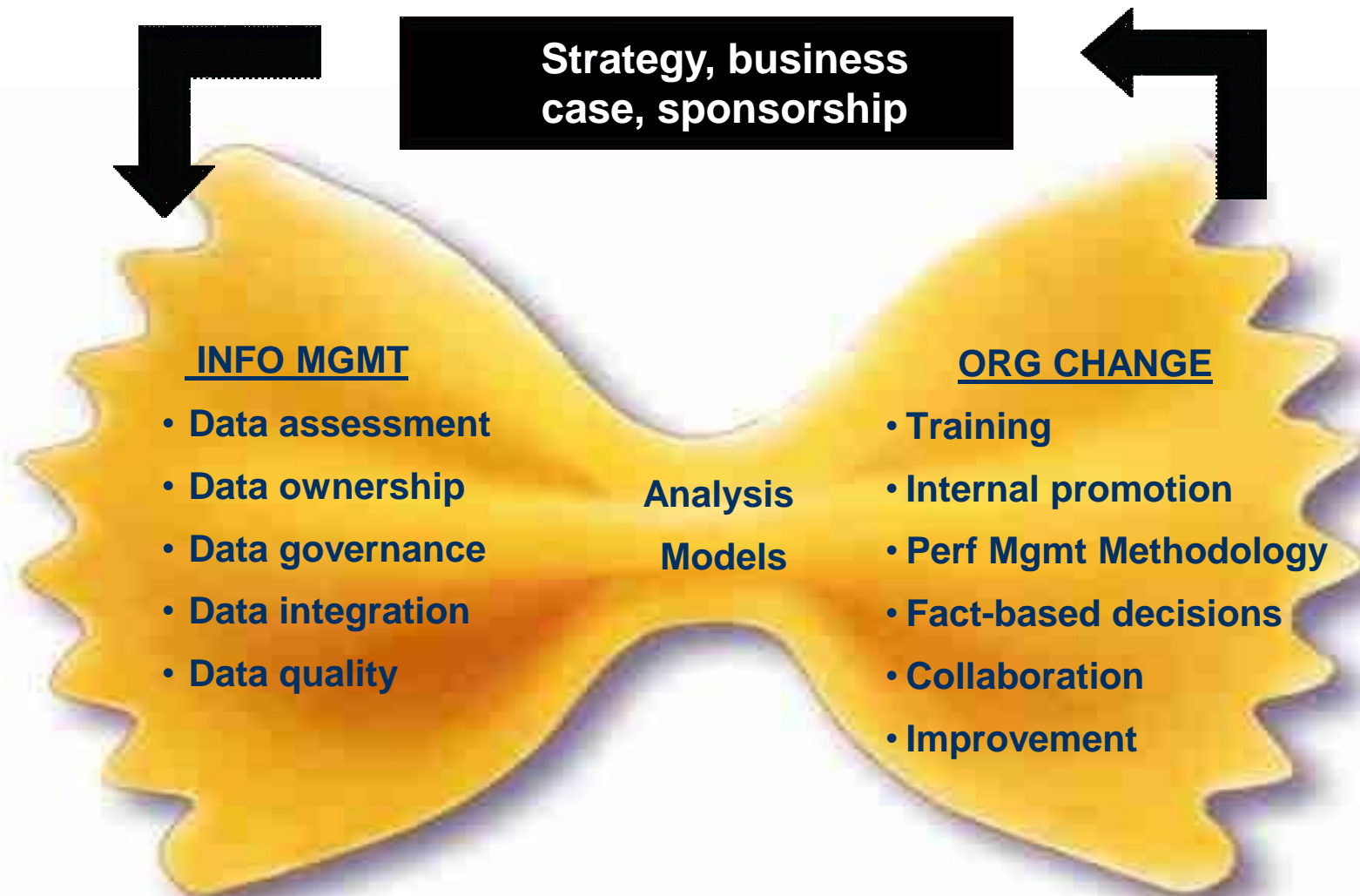
- Drivers

- Availability of data
- Information overload
- Awareness of the benefits

- Inhibitors

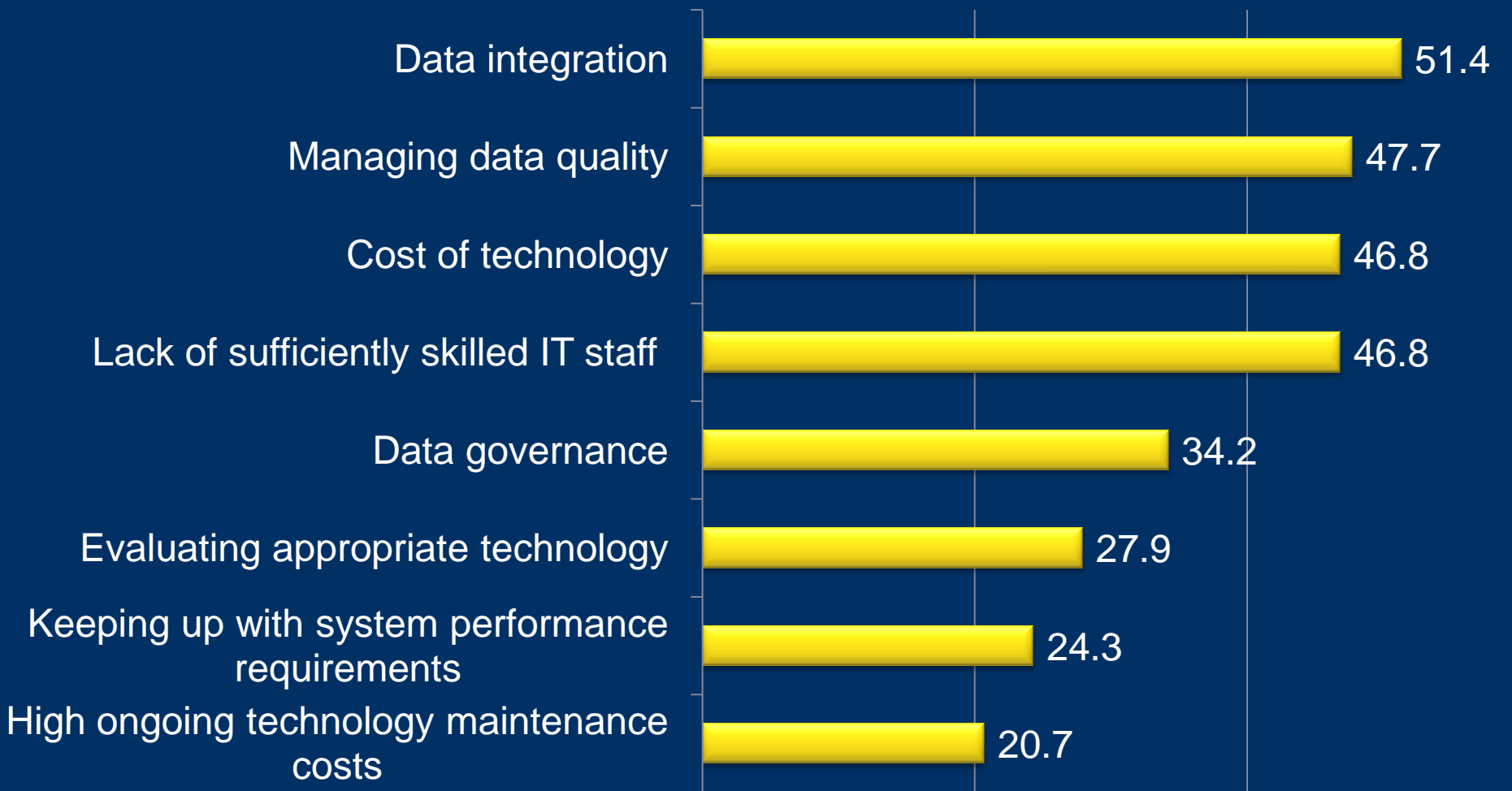
- Lack of sufficient technology and analytic skills
- Confusion about technology options
- Overemphasis on analytics at the expense of pre- and post-analytics processes

# Enterprise Data Management – Drivers and Inhibitors



# Enterprise Data Management Demand: Top IT Challenges

Q: What are the top IT challenges to delivering a successful business analytics solution?



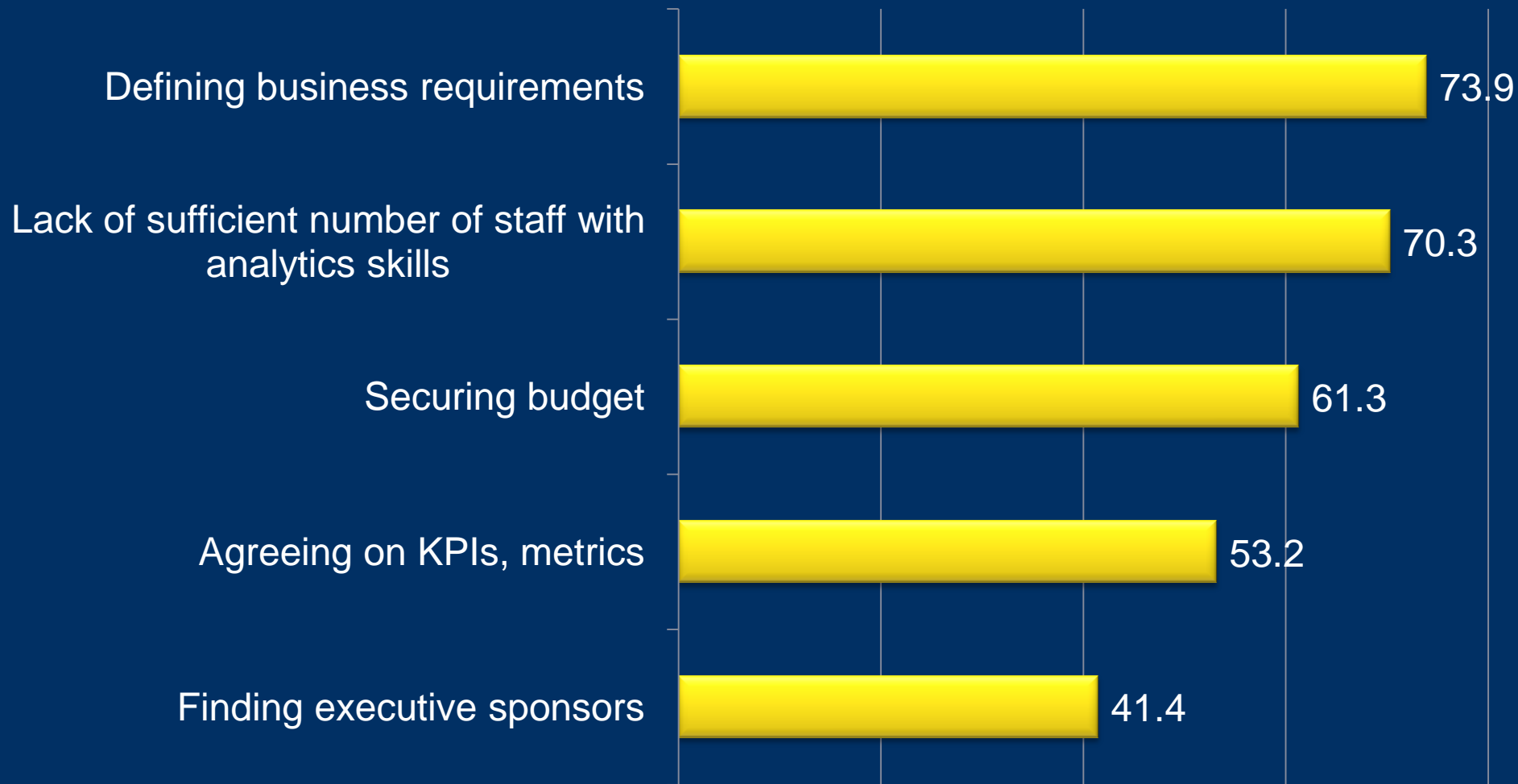
Source: IDC and Computerworld BI and Analytics Survey Research Group IT Survey, 2012, N = 111

# Enterprise Data Management Challenges

## – Demand: Top Business Challenges



Q: What are the top business challenges to delivering a successful BI and analytics solution in your organization?

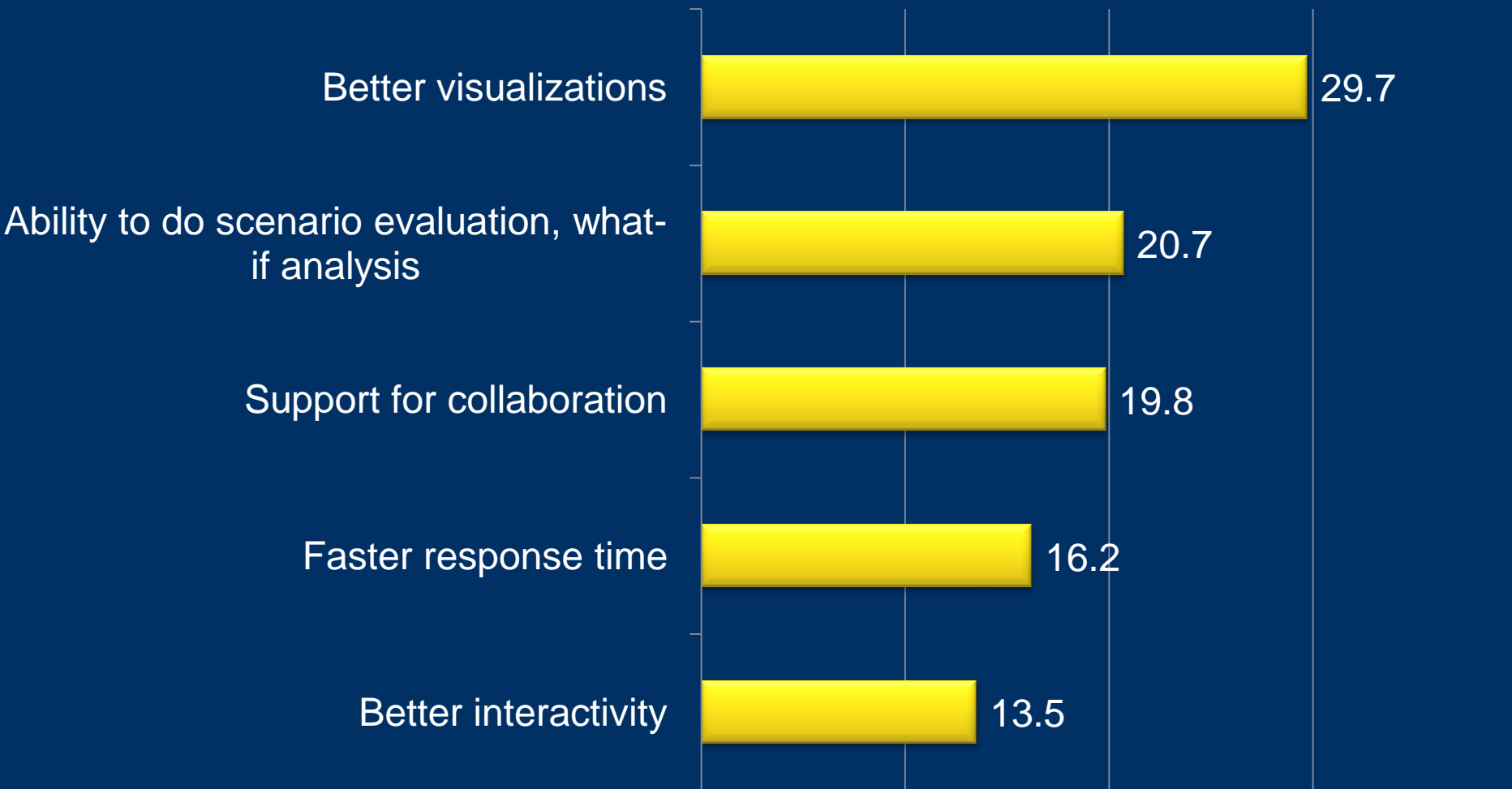


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# Enterprise Data Management Demand: Most Requested Improvements

Q: Which of the following would you most like improved from your current BI/Analytics software?

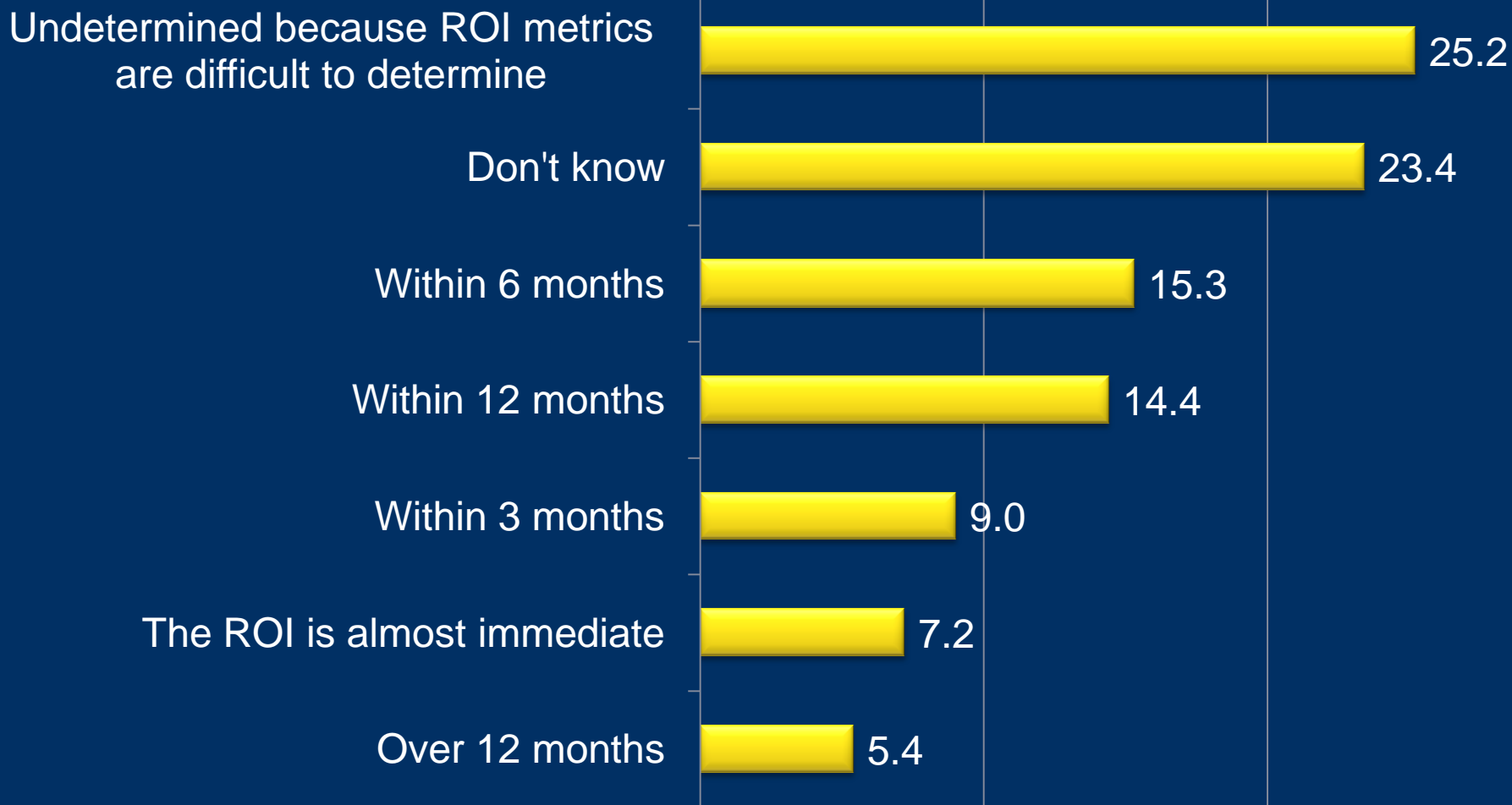


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# Enterprise Data Management Demand: Time to ROI

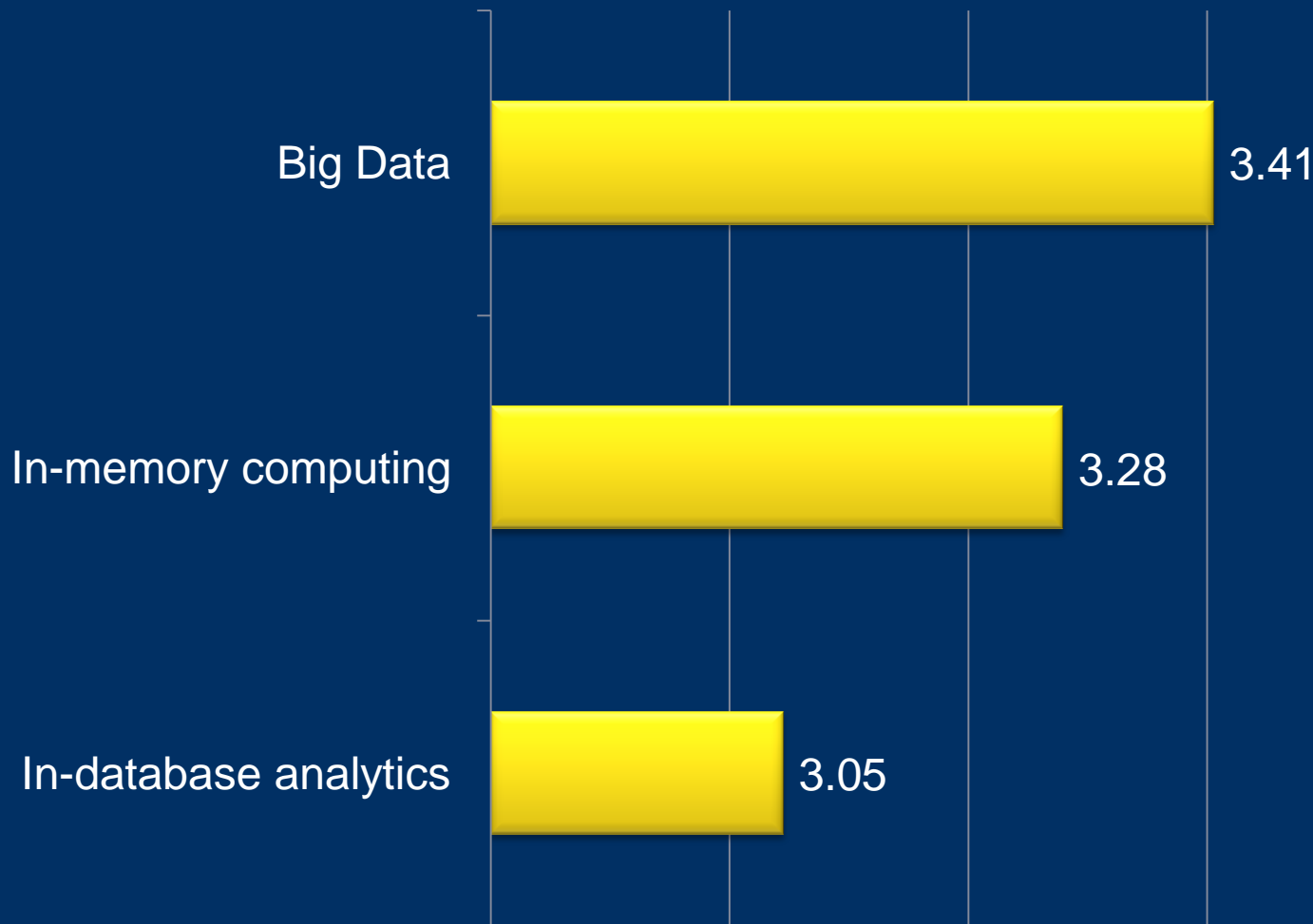
Q: What is the average time to ROI of a BI/analytics technology deployment in your organization?



Source: IDC and Computerworld BI and Analytics Survey Research Group IT Survey, 2012, N = 111

# Enterprise Data Management Demand: Familiarity with Concept

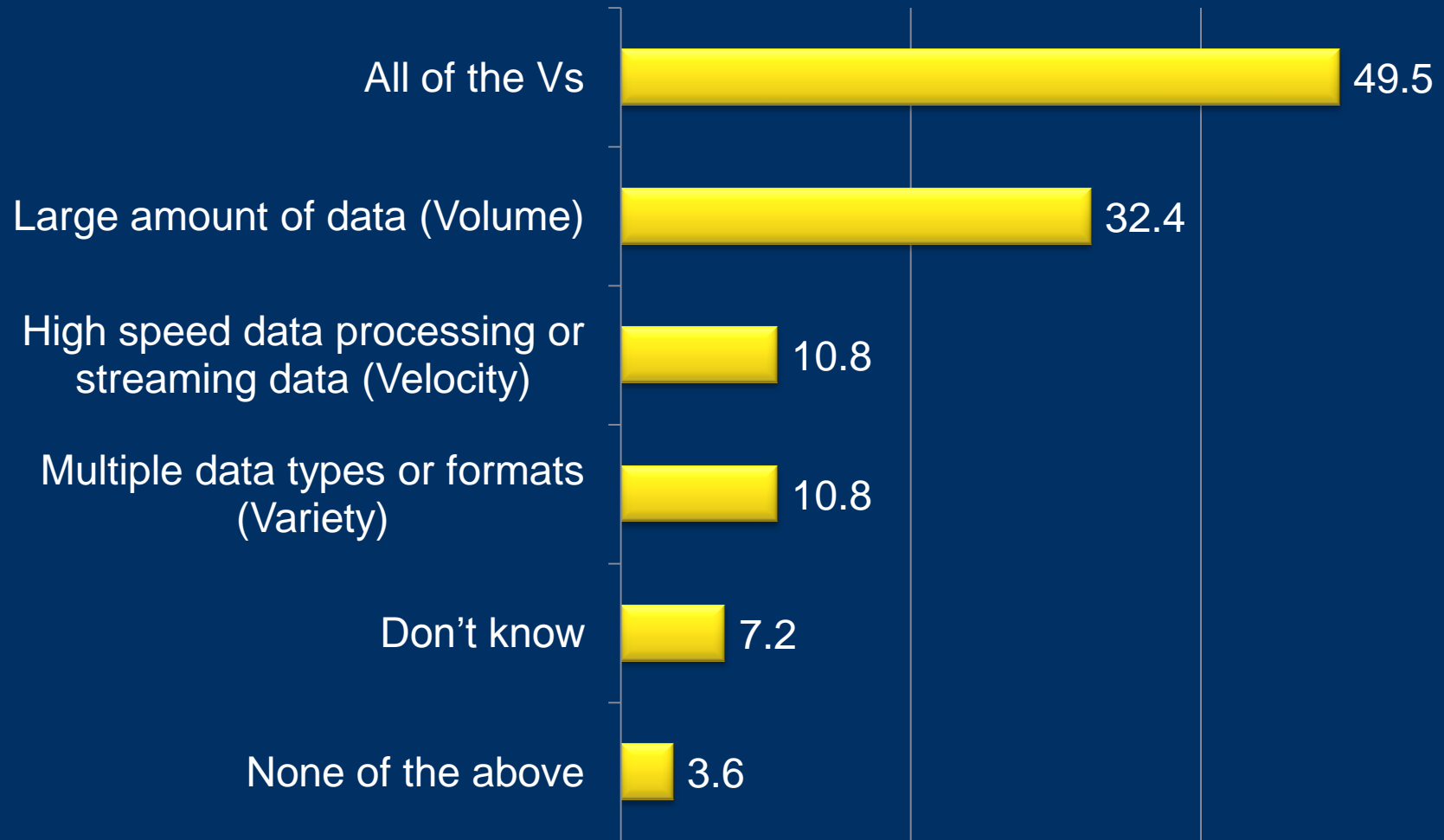
Q How familiar would you say you are with the following concepts or terms? (1 – 5; mean response)



Source: IDC and Computerworld BI and Analytics Survey Research Group IT Survey, 2012, N = 111

# Enterprise Data Management Demand: Big Data

Q What does Big Data mean to you?

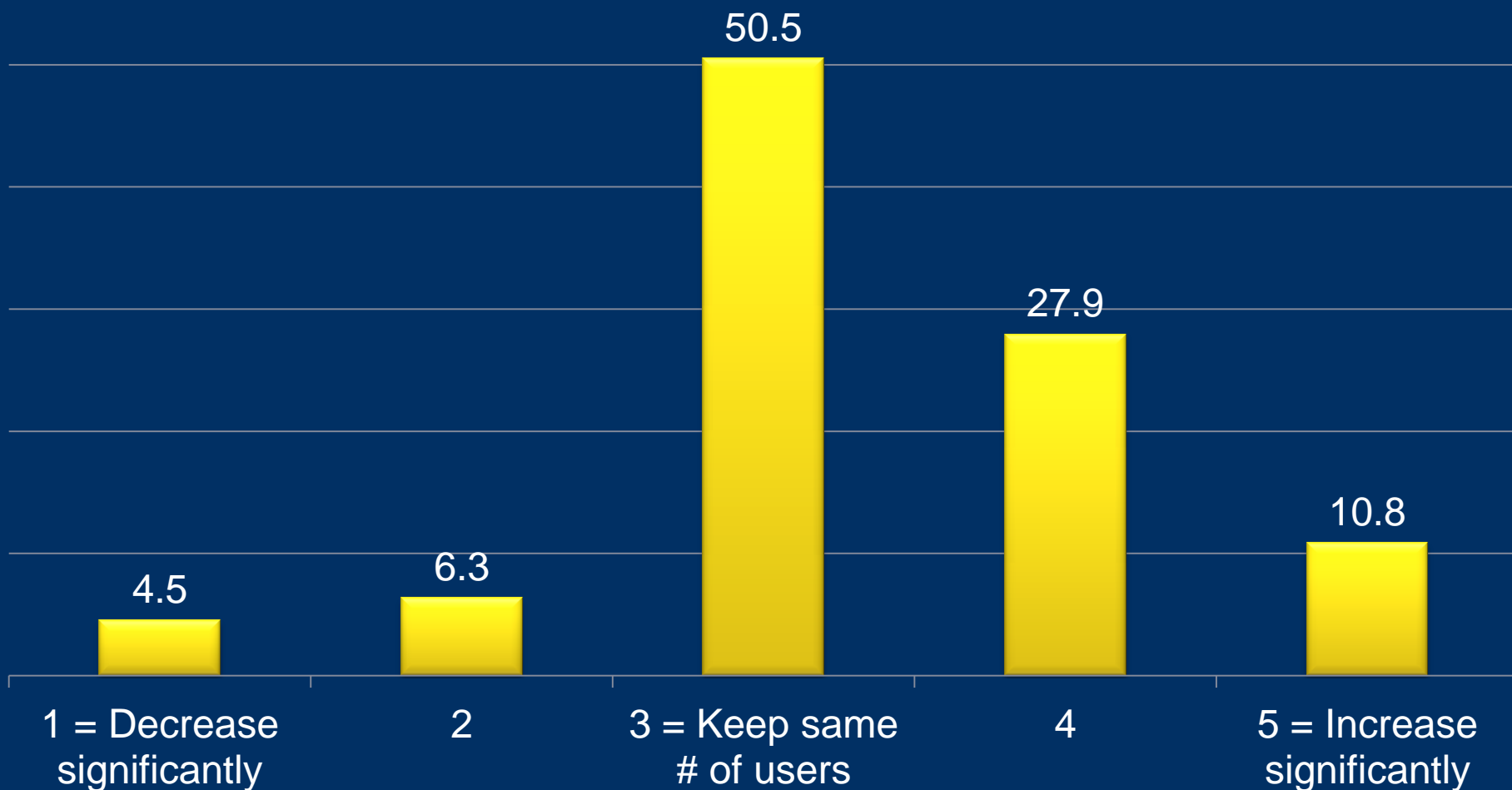


Source: IDC and Computerworld BI and Analytics Survey Research Group IT Survey, 2012, N = 111

# Enterprise Data Management Demand: Mobile BI



Q: Mobile BI Users - To what extent are you planning to make BI/analytics technology available to new/additional users in each of the following categories over the next 12 months?



Source: IDC and Computerworld BI and Analytics Survey Research Group IT Survey, 2012, N = 111

## Mobile

- Access data where, when needed
- Support a variety of mobile devices

## In-Memory

- Speed and efficiency
- Reduced cost of operation and admin.

## Cloud

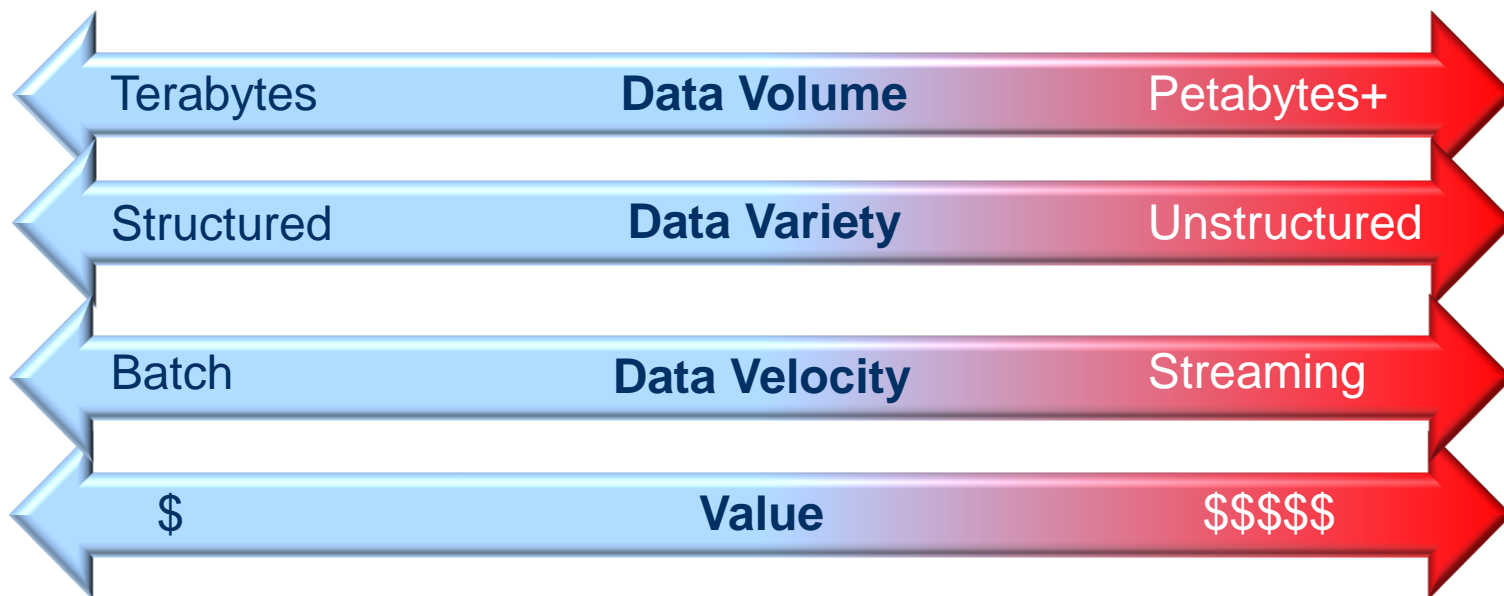
- Elastic scalability
- Flexible deployment
- Increased utilization rates

## Big Data

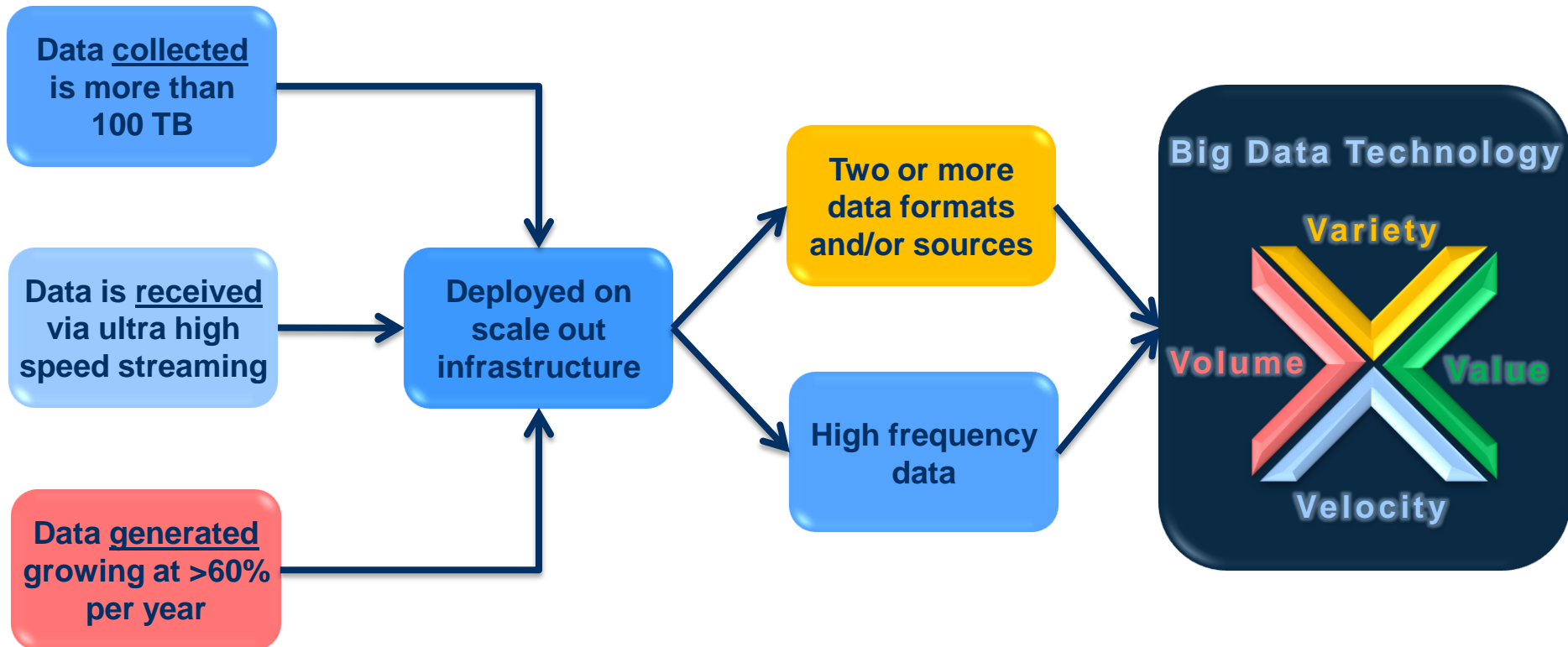
- 4 V's:
  - Volume
  - Variety
  - Velocity
  - Value
- Leverage all data available

# Big Data Technology Market Definition

Big Data technologies describe a **new** generation of technologies and architectures, designed to **economically** extract **value** from very large **volumes** of a wide **variety** of data, by enabling high **velocity** capture, discovery and/or analysis



# IDC Big Data Technology Criteria





- Faster access to information
- Access to all relevant information
- Improved accuracy of analytic models
- Better scalability of technology
- Better decisions



# Big Data Technology Use Cases

Document mgmt and access

Life sciences research

Fraud Detection

Web application optimization

Revenue assurance

Advertising analysis

Churn analysis

Warranty management

Smart meter monitoring

Healthcare outcomes analysis

Equipment monitoring

Legal discovery

Pricing optimization

Natural resource exploration

Traffic flow optimization

Weather forecasting

Social network analysis

IT infrastructure optimization

Customer behavior analysis



# Enterprise Data Information Management: A Critical Success Factor

Why? Agile enterprise requirements include

- Making data available on mobile devices, administering data in the Cloud
- Accelerating data manipulation in-memory
- Ingesting Big Data

These all require knowledge of what and where the data is, and enforcement of rules for visibility and access.

Key EIM Functions:

- Master data management
- Information lifecycle management
- Common metadata management
- Data integration that serves dynamic applications
- Uniform data quality and data security for trustworthy data

# Architectures to Address Emerging Needs

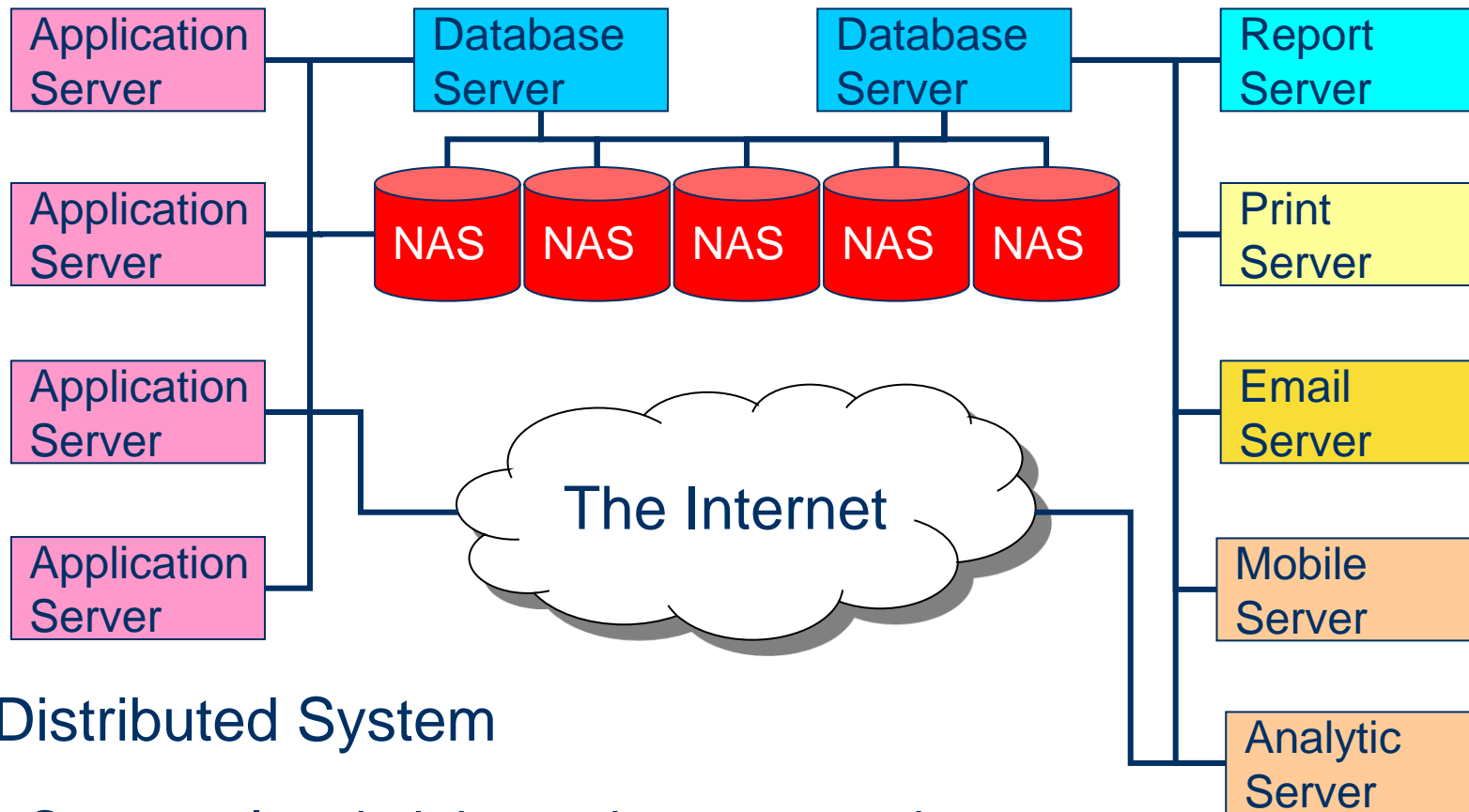
Mobile – Requires flexible mobile device manager

In Memory – Requires sharable virtual memory

Cloud – Requires virtualization of all system assets

Big Data – Requires scalable, high volume data ingestion

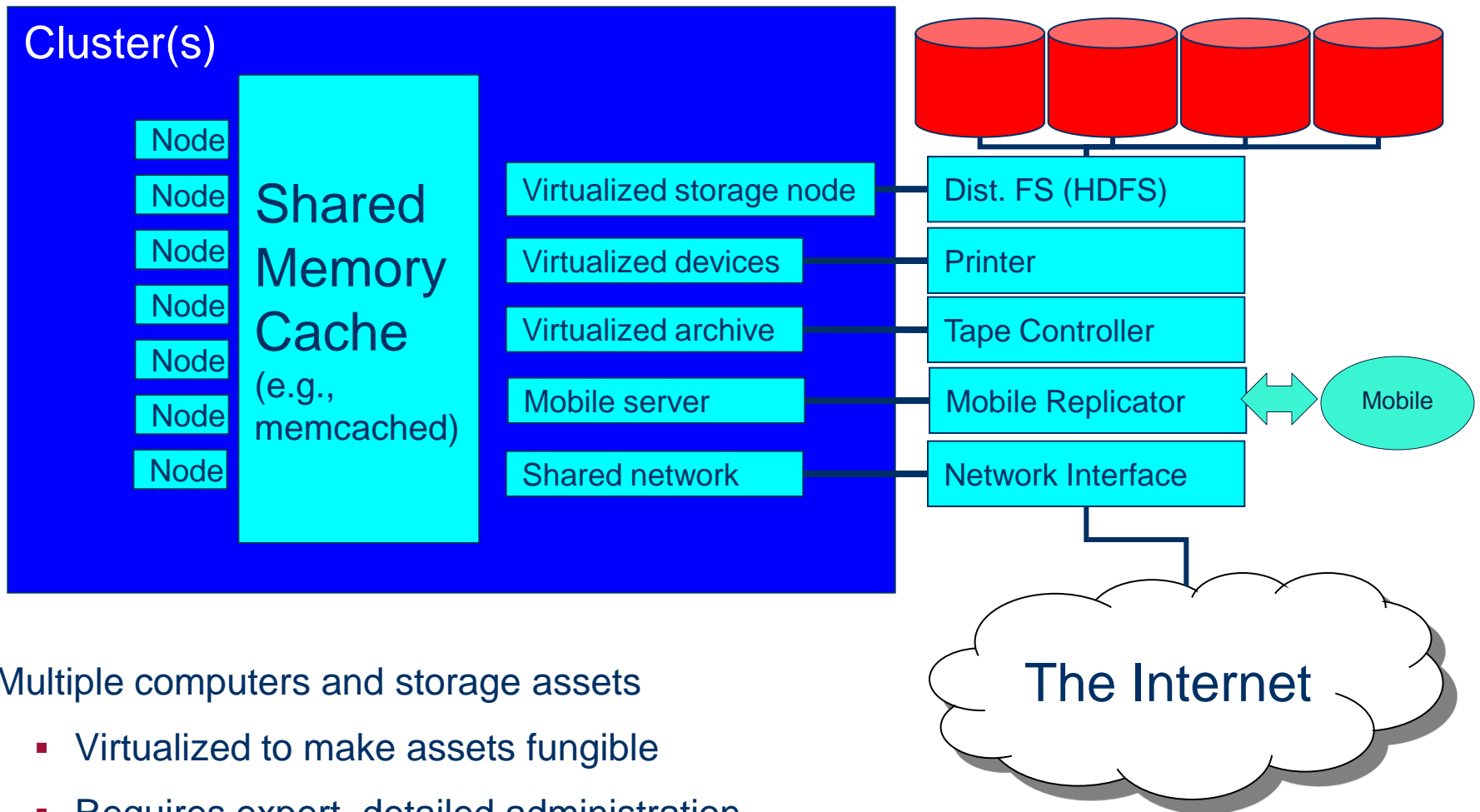
# Classic Distributed Systems Management



## A Distributed System

- Separately administered servers and storage
- Linked together in a separately administered generalized network

# Cloud Systems Architecture



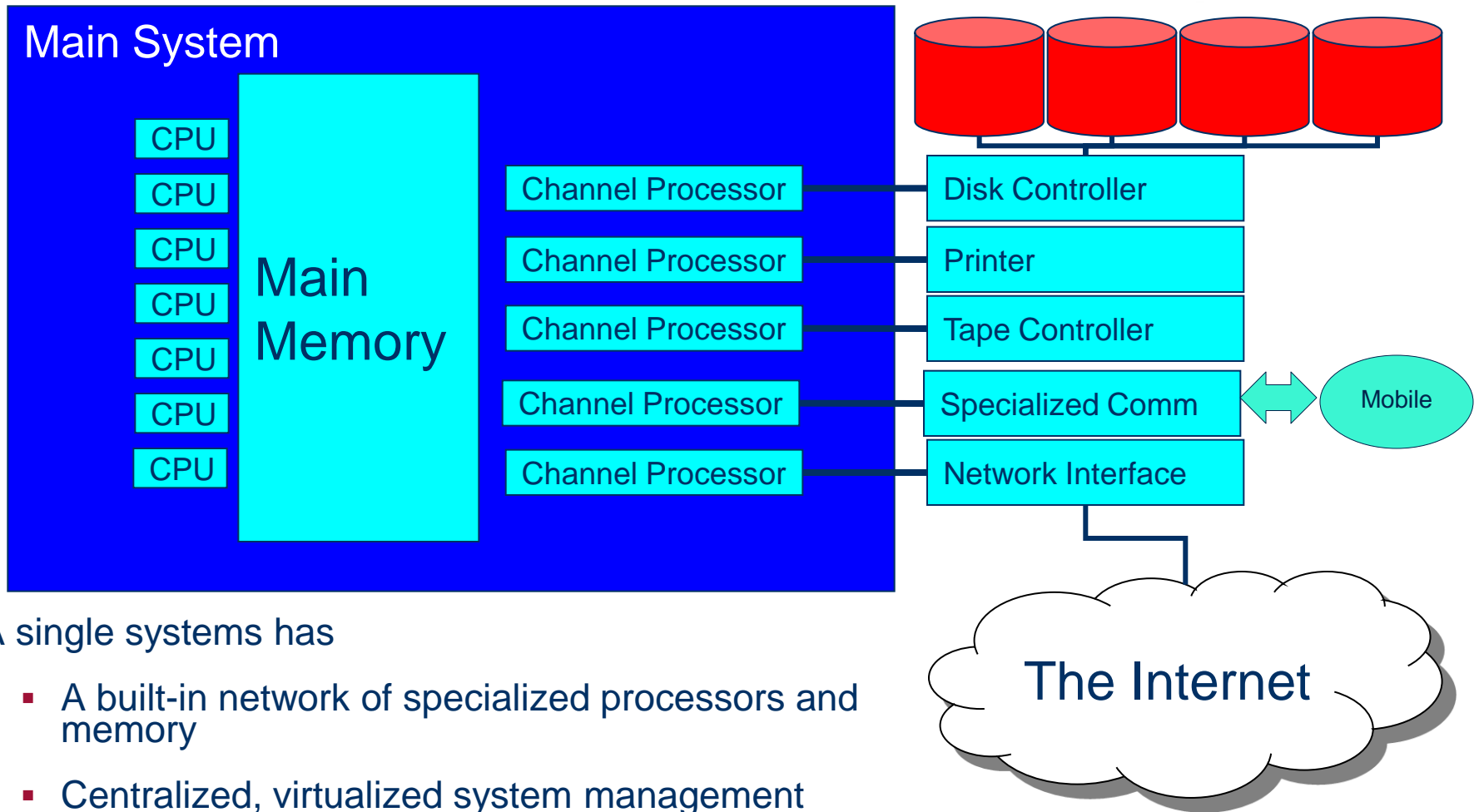
Multiple computers and storage assets

- Virtualized to make assets fungible
- Requires expert, detailed administration
- Finely tuned for inter-system cooperative processing

This model is being challenged by the appliance movement.



# Mainframe Systems Management



A single systems has

- A built-in network of specialized processors and memory
- Centralized, virtualized system management
- Deferred interrupts for exceptional throughput

Addresses some issues that appliances address.



# System z Challenges and Opportunities

## Challenges

- The talent pool must be replenished with people who can administer and program System z.
- Administration functions must be usable by people without the specific, specialized skillset of experienced mainframe systems programmers.

## Opportunities

- System z can be molded into a private Cloud environment with much simpler administration than the many piece-part alternative
- System z pricing should not be compared with distributed systems, but with complete, architected networks of many distributed systems, storage, and high speed networking.

## General Conclusions

- Business needs to process more data faster, more flexibly
- These pressures have produced demand for the IDC Four Pillars: mobile, in-memory, Cloud, and Big Data
- Users need complex systems that are less, not more complex to administer.
- The mainframe can serve as an effective foundation for a strategy that supports the Four Pillars.

## Recommendations

- Vendors should seek to partner to help users build layered systems that enable them to leverage all the existing assets.
- Users should seek to build for future needs without jettisoning valuable assets.
- System z can serve as an effective foundation for systems that are based on Cloud (public or private), support low-cost system clusters for Big Data, manage mobile data, and provide shared large virtualized memory support.