

We Need To Get It Together... Unify The Chaos!

Solve your business puzzles with **Intelligent Solutions**



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A thought leader, visionary, and practitioner, Claudia Imhoff, Ph.D., is an internationally recognized expert on analytics, business intelligence, and the architectures to support these initiatives. Dr. Imhoff has co-authored five books on these subjects and writes articles (totaling more than 150) for technical and business magazines.

She is also the Founder of the Boulder BI Brain Trust (BBBT), an international consortium of independent analysts and experts. You can follow them on Twitter at #BBBT or become a subscriber at www.bbbt.us.



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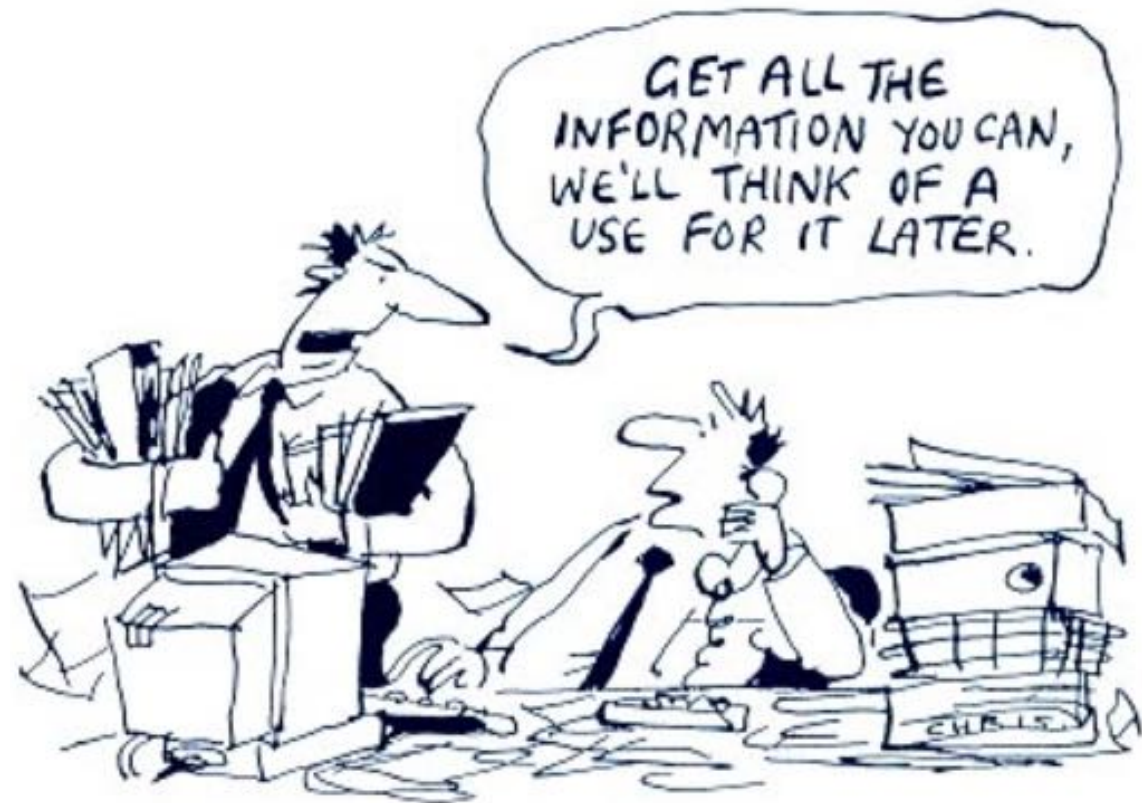
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Agenda

- ➔ ■ CHAOS: How Did We Get Here?
- How Do We Fix It?
- What You Will Need



Data, Data Everywhere...



- 90% of world's data was created in last 2 years*
 - 80% was unstructured
- Number of mobile devices exceeds number of people**
 - "By 2016, there will be 1.4 mobile devices per capita"
- Cloud services becoming ubiquitous and more integrated
- Internet of Things (IoT) is still in its infancy but...
 - Is a dominant source of machine-generated data
- Challenge & opportunity is not only to store this data...
 - But to capture, analyze & manage it to obtain meaningful value

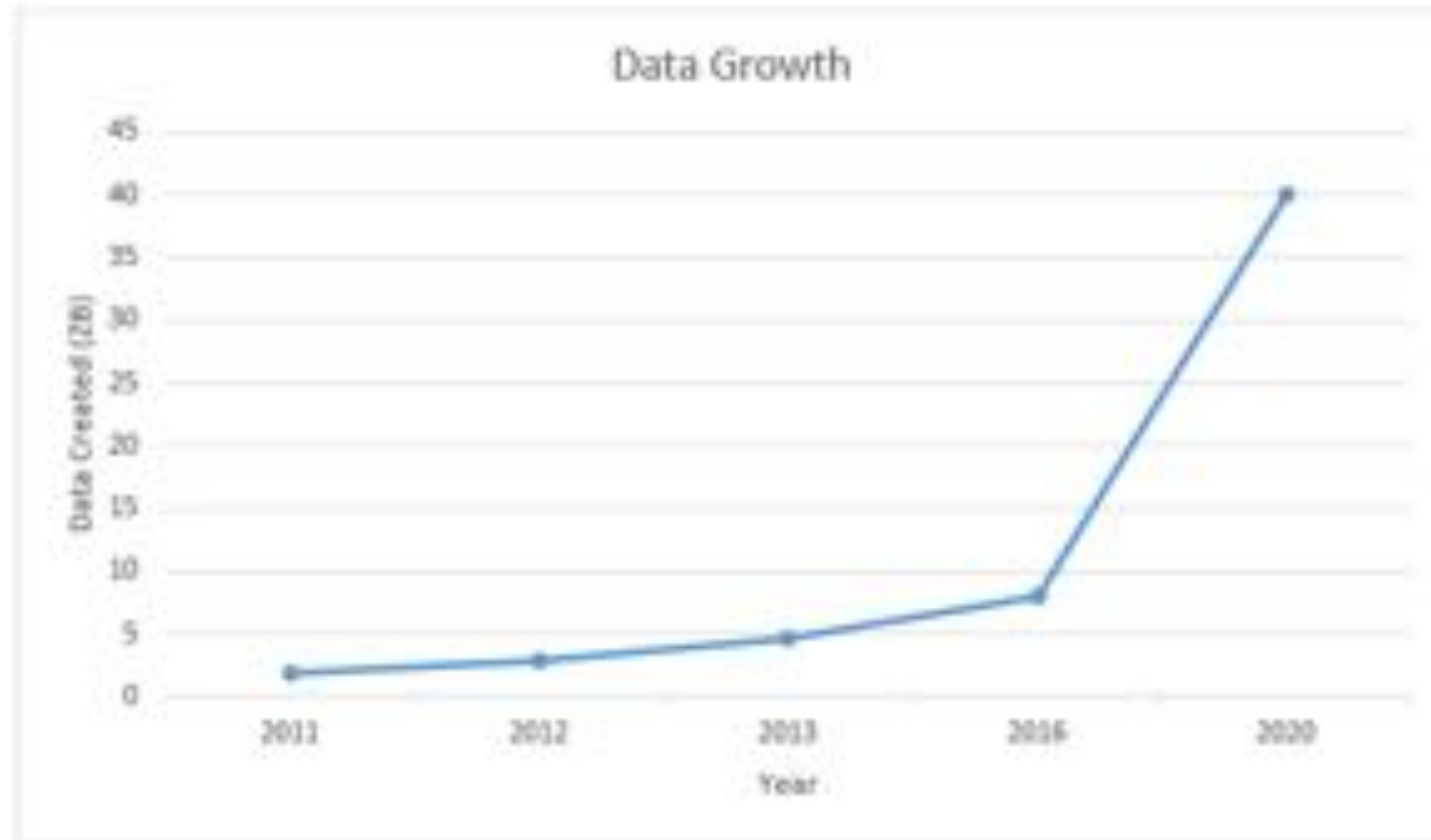
**IBM Information On Demand conference keynote November 2013*

***http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white_paper_c11-520862.html*



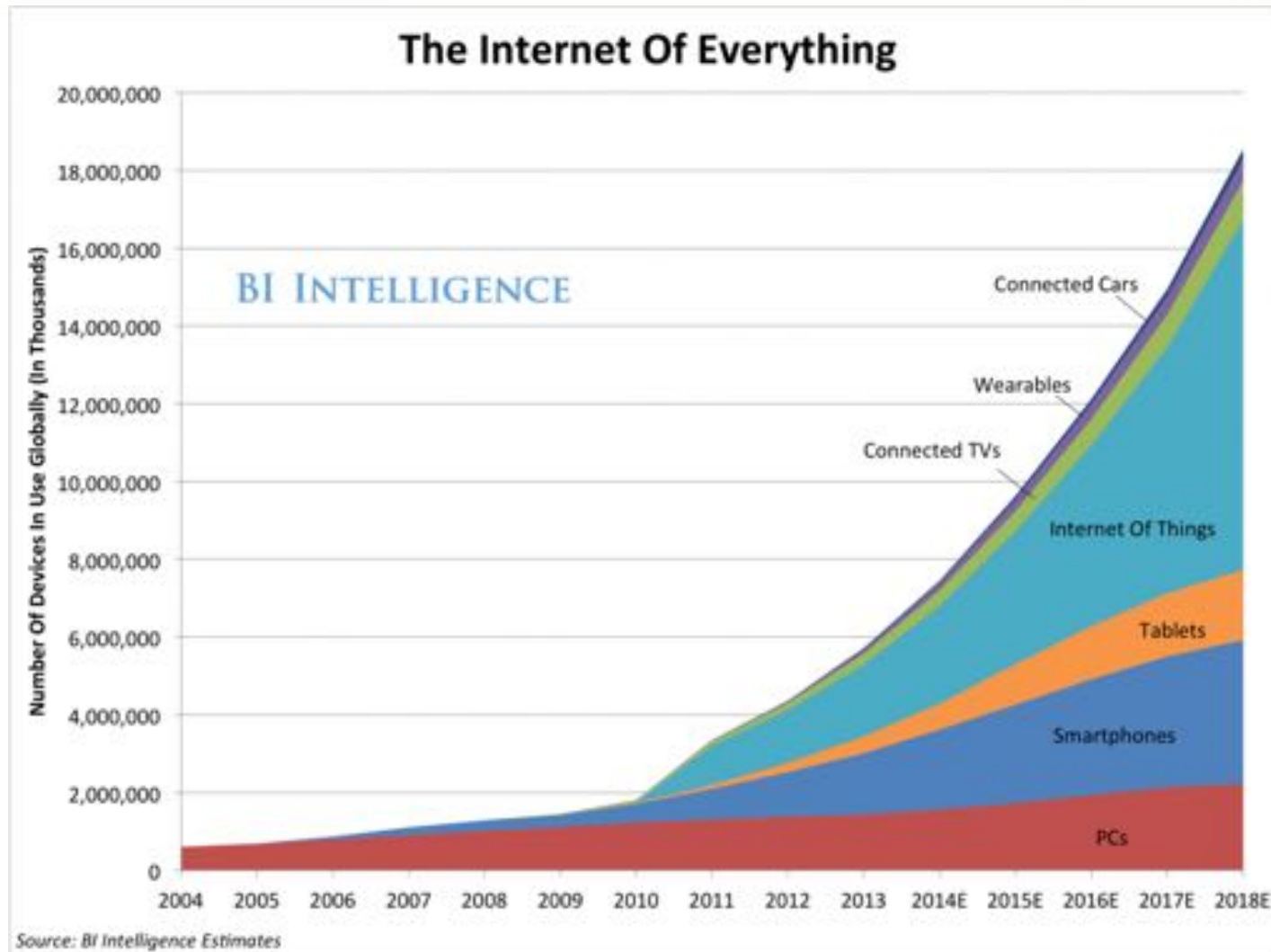
Data Growth – Yowza...

A Zettabyte = 1 MILLION Petabytes



Source: <https://www.linkedin.com/pulse/data-wars-eduard-jubany-tur/>

Connected Devices





We Are ALL Technologists!

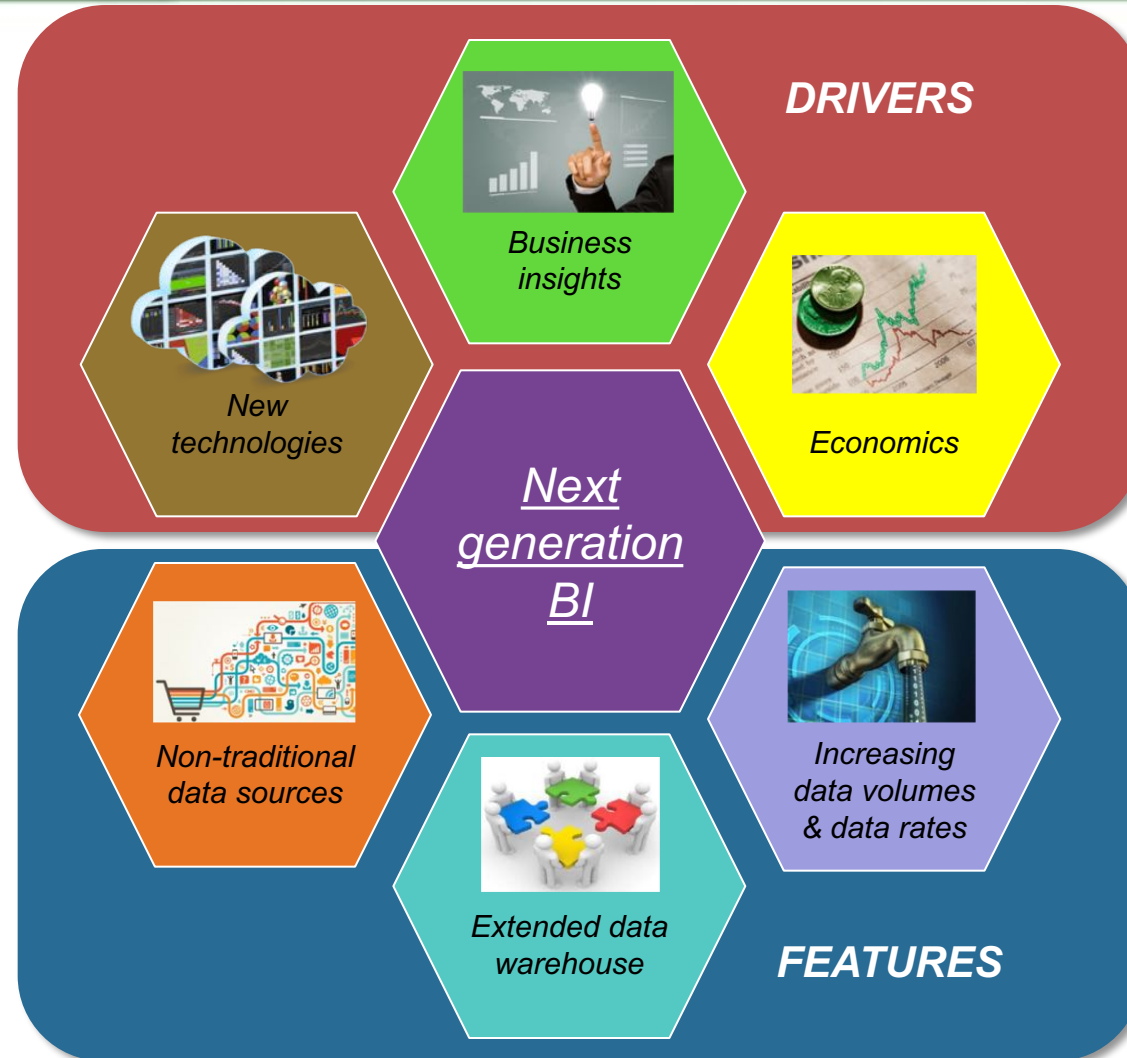
- We are never NOT connected...
- Who reads a paper book, a newspaper, a map?
- Where do we get answers to questions?
- We share everything about our lives.
- We expect our businesses to support our choices of technologies
- We seek electrical outlets wherever we go...

BUT... are we all analysts?

Answer: Yes, at some point in our workday



Next Generation BI



Based on a concept by Shree Dandekar of Dell

Four Disruptive Eras

OLTP systems

1960



Airline reservation systems

Commercial RDBMSs

1970



*ATMs
POS terminals*

Data warehousing

1980



Mobile phones

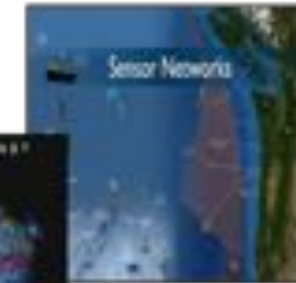
1990



Internet & WWW

Big data

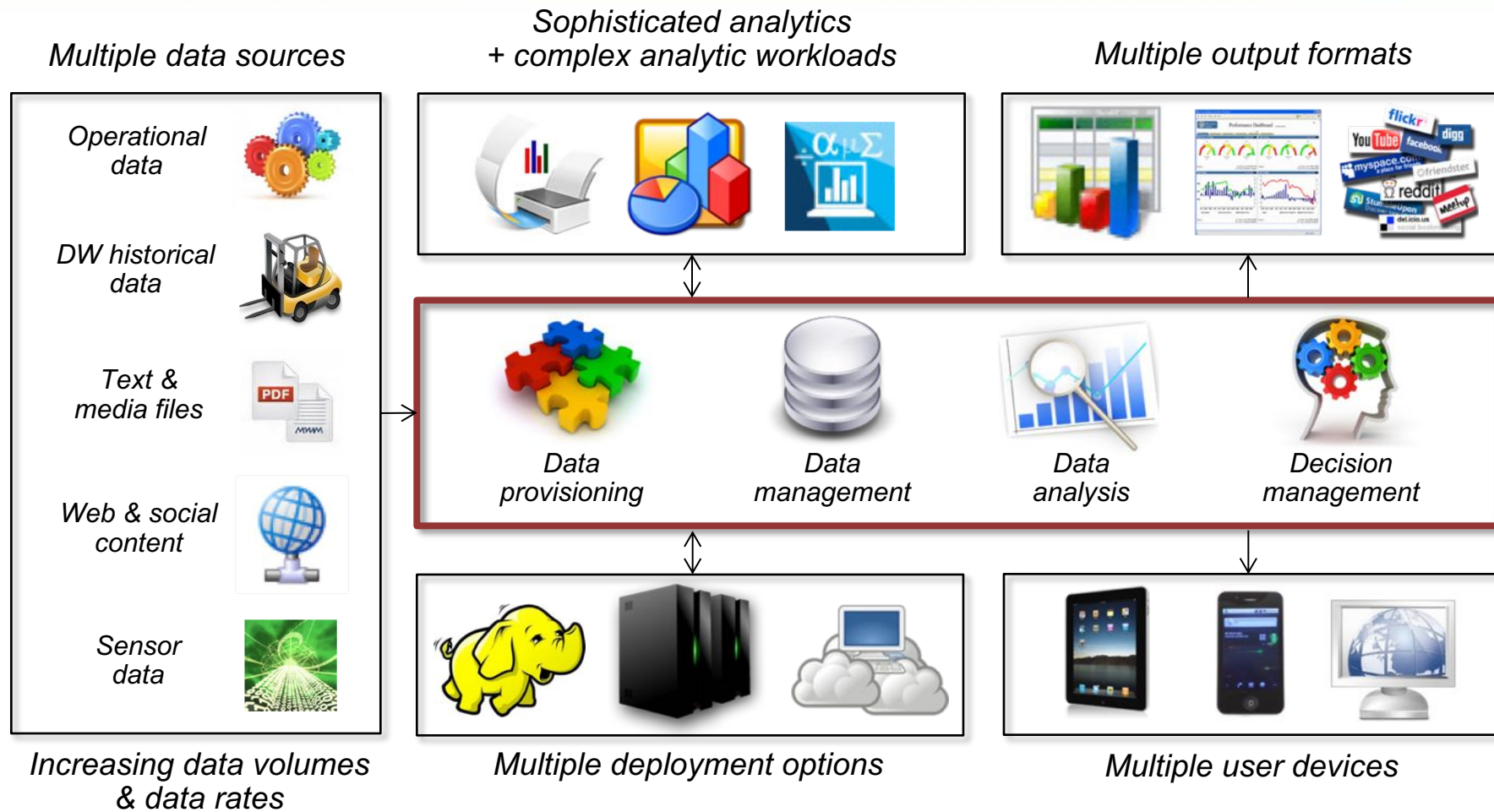
2015



*Sensor networks
IoT*



A Complex BI Environment





The Problem

- Data proliferates at a tremendous speed
 - It is now in unusual – weird – formats, storage mechanisms
 - It has massive volumes
 - More data means complete picture of situations, customers, outcomes, and so on
- Creating a data-driven organization means we must:
 - Quickly find the right data for each situation, analysis
 - Support collaboration between analytically savvy & technologically naïve users
 - Share knowledge about data/analytics throughout the organization – regardless of skills of business community



Finding the Right Data

- Jerry McGovern, writer for New Thinking Newsletter, put the problem into perspective:

“Being an information worker is a bit like being a hunter-gatherer. Instead of hunting for food you are hunting for information. The life of the information hunter-gatherer is not easy. For instead of wading through swamps and climbing treacherous mountains, this information hunter-gatherer wades through search results and stumbles through data fog.”



From: New Thinking Newsletter, <http://www.gerrymcgovern.com/homepage>



Random Implementations Have Lead to Chaos!

Relational Technologies

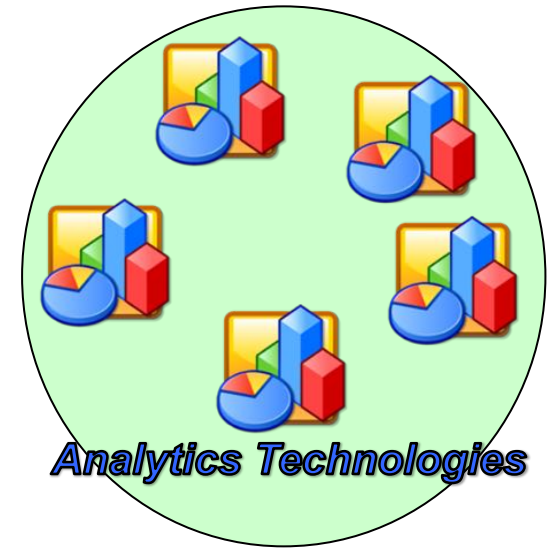
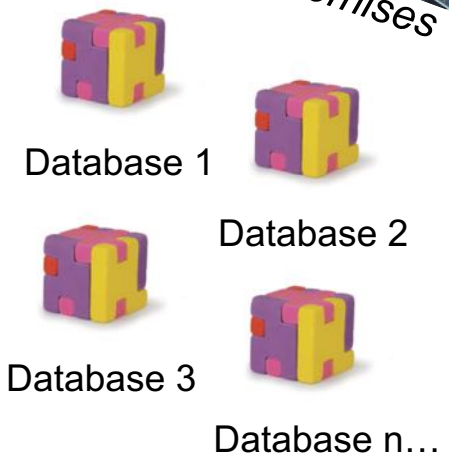


On-Premises



NoSQL Technologies

Cloud



Analytics Technologies

Data is EVERYWHERE! But so very hard to find...

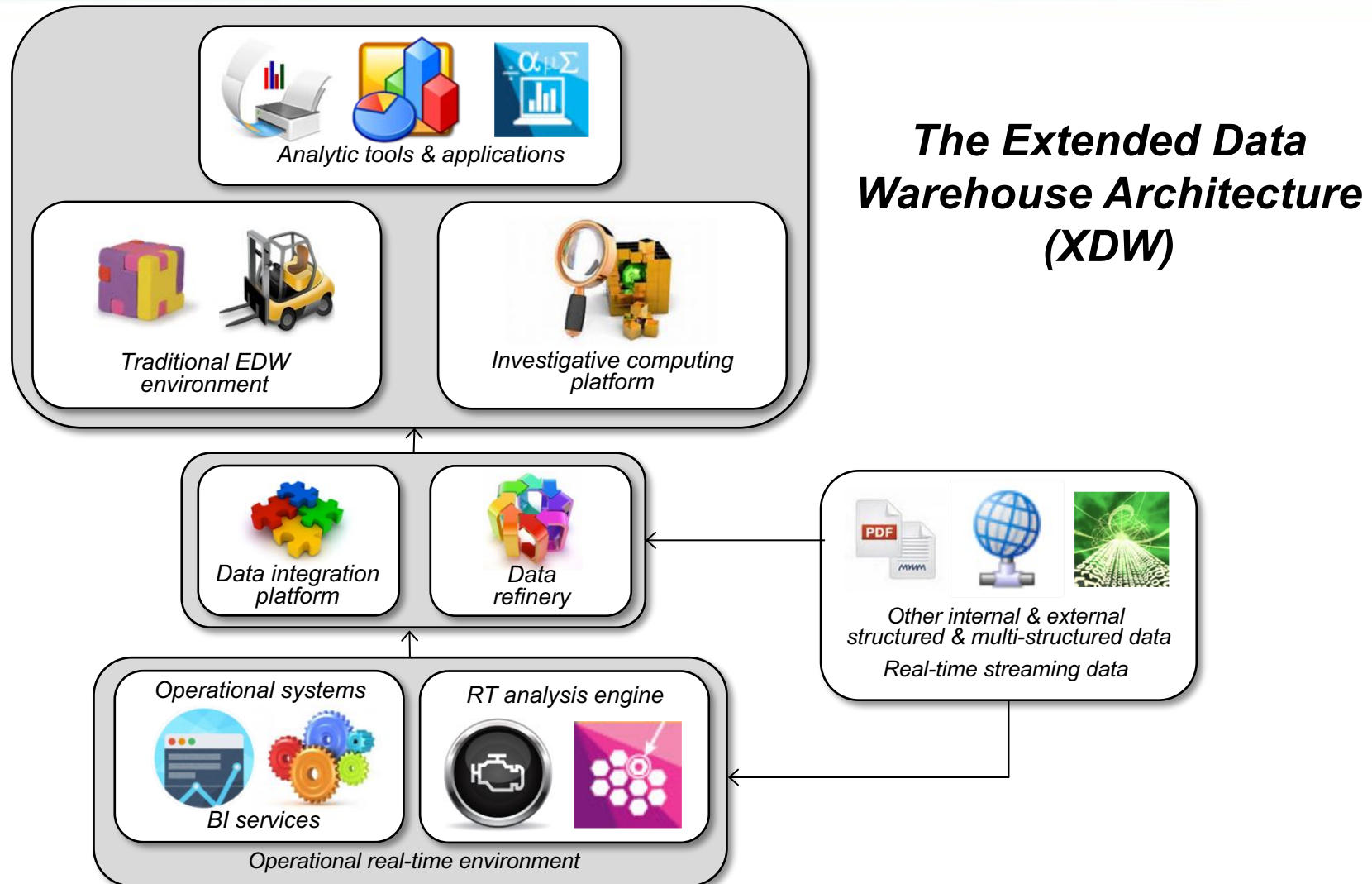


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Start With An All-Encompassing Architecture





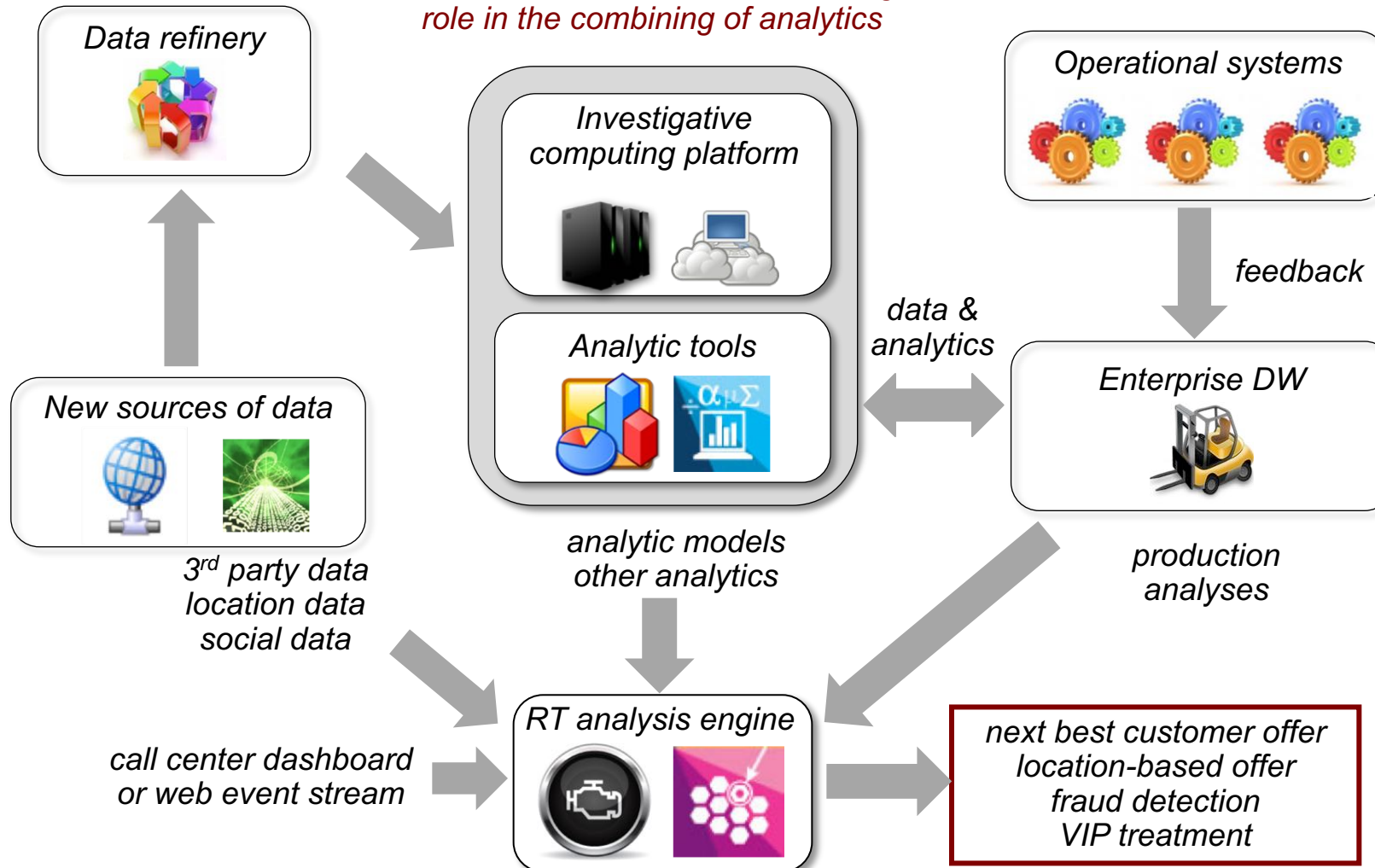
These are NOT Silos!

- The XDW has three analytical components
 - Traditional EDW for production, trusted analytics
 - Investigative computing platform for “what if” and experimental analytics
 - Operational applications using embedded BI and RT streaming analytics
- Good decisions mean integrated and actionable analytics
 - Most decisions require analytic input from all three analytical components
- Access to all analytics depends on appropriate integration technologies



All Components Must Work Together

NOTE: data virtualization has a big role in the combining of analytics



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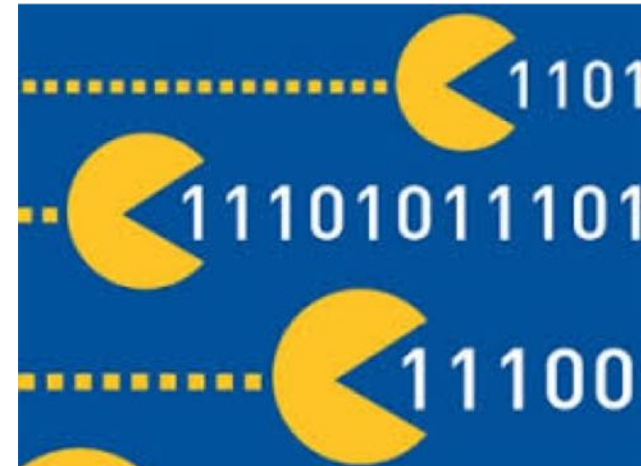
What You'll Need: Support for New Types of Information Workers

- Four types of information workers
 - Data Scientist
 - Data Engineer
 - Business Analyst
 - Data Interpreter



What You'll Need: More Consumable Data

- Incorporate appropriate level of data governance for all projects (including big data ones)
- Don't forget about data quality – regardless of where it's stored
- Focus on attaining new data and new data sources faster
- People need to see data in different forms





What You'll Need: An Analytics Program

Develop an analytics program:

- Determine objectives & goals for analytics first
- Perform an audit of maturity of internal capabilities like
 - Metric measurement, measurable goals, secured budget/resource, predictive models, quality of data, etc.
- Pick appropriate technologies
 - Some BI tools better for specific real-time analysis (e.g., reduction of fraud, risk or churn)
 - Others better for long-range issues (e.g., new market entrance, customer loyalty and lifecycle management)





What You'll Need: Understandable Analytics

- Analytics must be more easily understood and consumed!
 - Data visualization
 - Easy user interface
 - Match technology to users' skills
 - Business glossary
 - Data lineage tracking
- Data science is not an ivory tower
 - Speak language of business – or hire “data interpreters”
 - Maintain good working relationship with IT – you’ll need them
 - Don’t forget what the business problem is





What You'll Need: Analytical Thinking!

- Education throughout the enterprise is mandatory
 - For all employees!
 - This is **NOT** the same as training on BI tools
 - Education includes how to think analytically/critically, how to interpret results, who to ask for help
 - Advanced BI analysts (business analysts, data scientists, etc.) must evangelize value of analytics
- Many business people don't know where to get training
 - May be embarrassed to ask for it or intimidated by it
 - May not know what BI resources or data is available





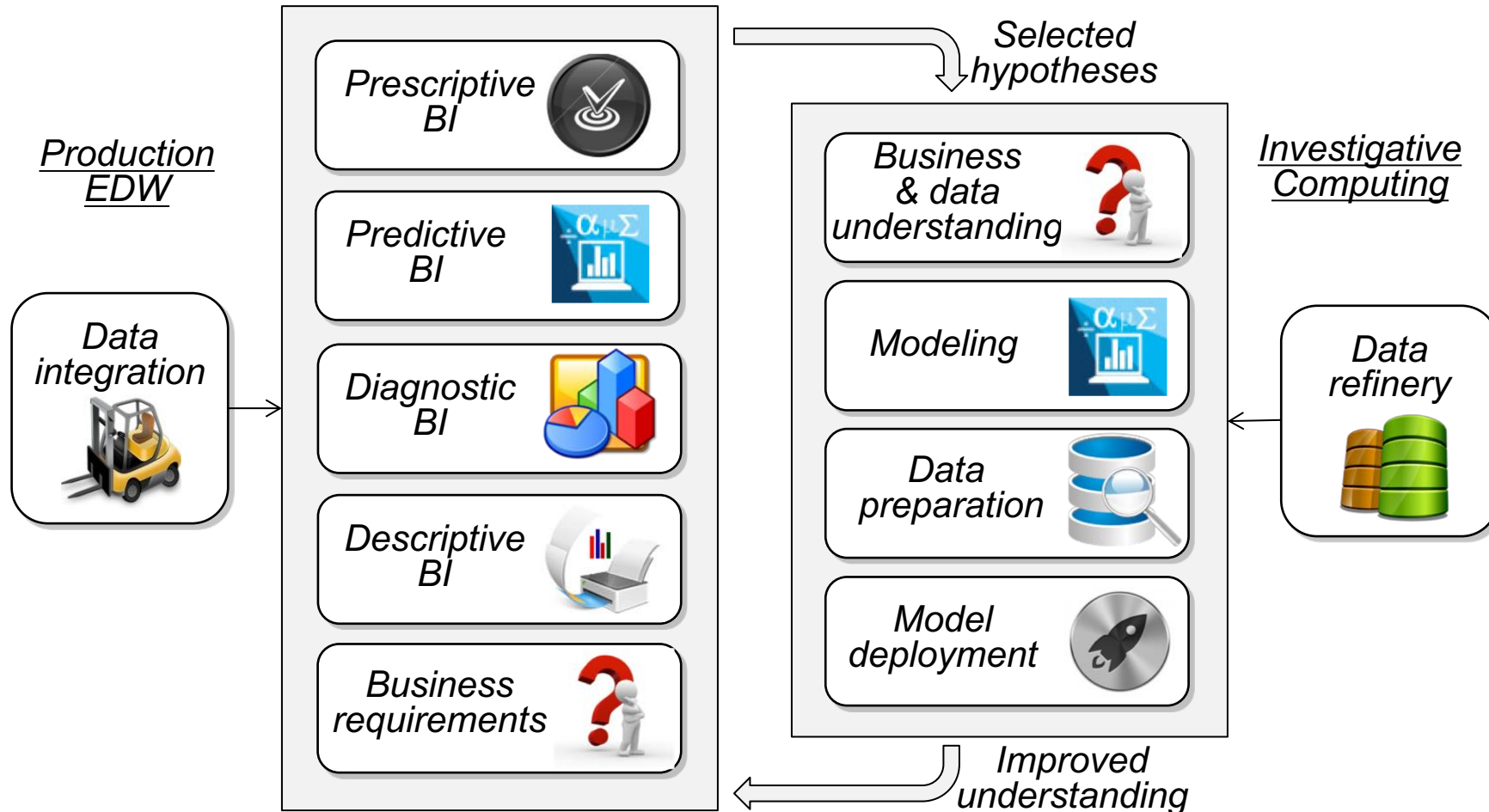
What You'll Need: IT Involvement

- Many deployment models
 - Cloud implementations on the rise
 - Integration in hybrid environments becomes critical
- Governance still has an important role
 - Determine whether data used is “governed” (e.g., in a data warehouse or MDM environment) or “ungoverned” (e.g., individual spreadsheets, external source)
- IT must have monitoring and oversight capability
 - Must be able to monitor the environment
 - Must have oversight into the environment



What You'll Need: Technology For Both Investigative Computing and EDW

New technologies can support both environments





Final Thoughts

Need fast time to value to gain business benefits from big data technologies

- *Impractical to use traditional enterprise DW approach for all solutions*
- *Need to extend the existing DW environment to support new capabilities*

Need high performance solutions for supporting new BI analytic workloads

- *One-size fits all data management is no longer viable*
- *Match technologies and costs to business needs and analytic workloads*

Need to modify data modeling and integration approaches

- *Need to support new data types, sources and deployment options, and new approaches such as data blending, schema-on-read and data refineries*

Need to modify data governance approaches

- *No longer practical to rigidly control and govern all forms of data – use different levels of governance based on security, compliance, quality and retention needs*



Questions?

