

Business
Analytics:
The Big Leap
Forward



SEXIER
SMOOTHER
EASIER
NIMBLER
RUN FASTER
BETTER
FASTER



Business Analytics Has Struggled to Keep Up



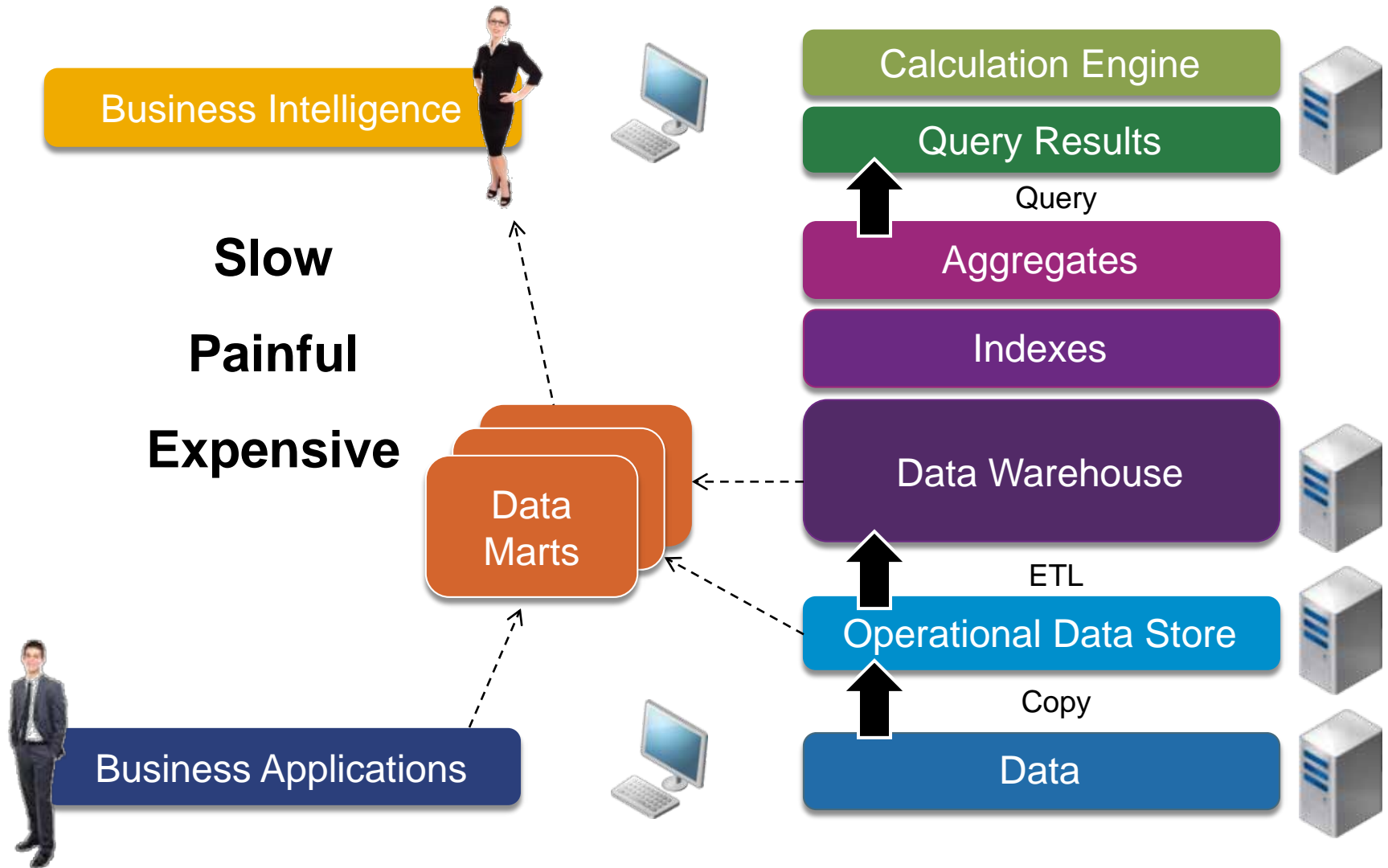
A Revolution...

Gartner Says Data Warehousing Reaching Its Most Significant Inflection Point Since Its Inception

We believe the industry stands at the cusp of the most significant revolution in database and, therefore, application architectures in the past 20 years.

Credit Suisse, “The Need for Speed”

“Typical” Business Intelligence Today



What's the Problem?

30 Year-Old Database Design Principles



Slow Disks & CPUs

I/O Bottleneck

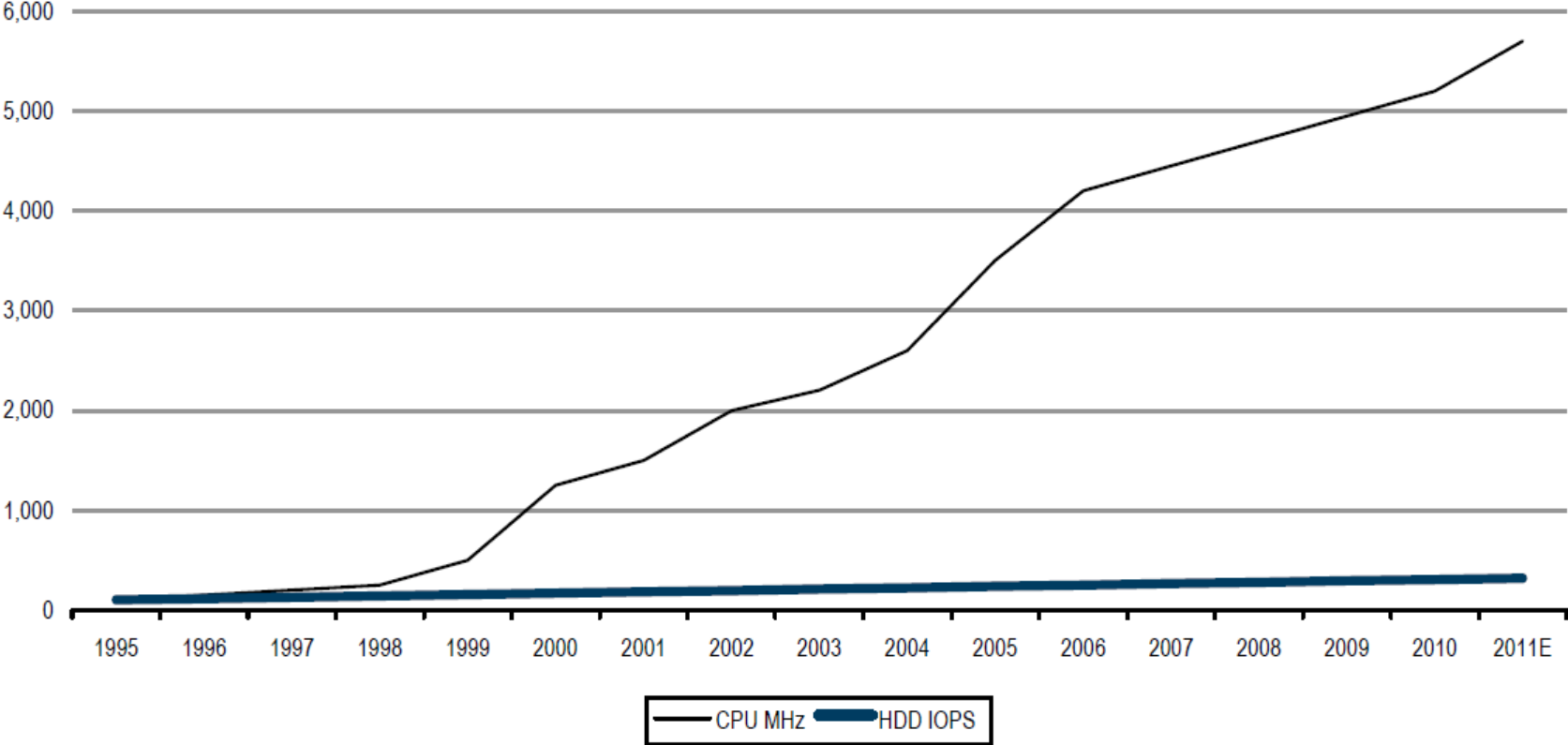
Expensive Memory



Optimized for Transactions

BI is an Afterthought

Today's Disks Can't Keep Up With Processing Power

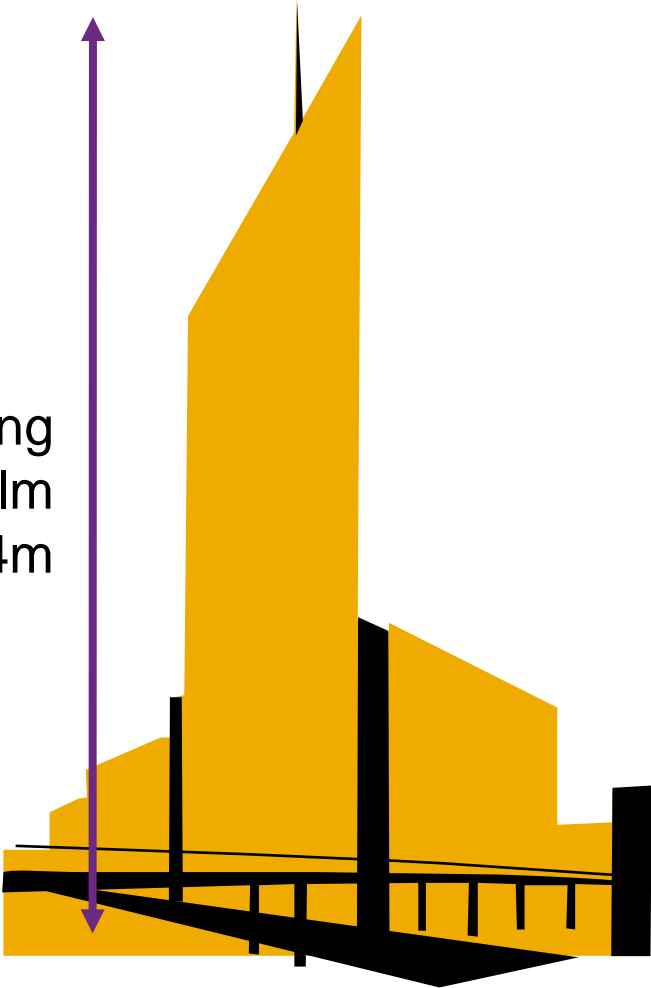


Source: Microsoft, Credit Suisse.

In-Memory Computing Costs have Plummeted

Cost of 1 Mb of memory in 2000: ≈\$1

Kista Science Building
Stockholm
124m



In-Memory Computing Costs have Plummeted



My daughter:
1m

Cost of 1 Mb of memory
today: $\approx \frac{1}{2}$ cent

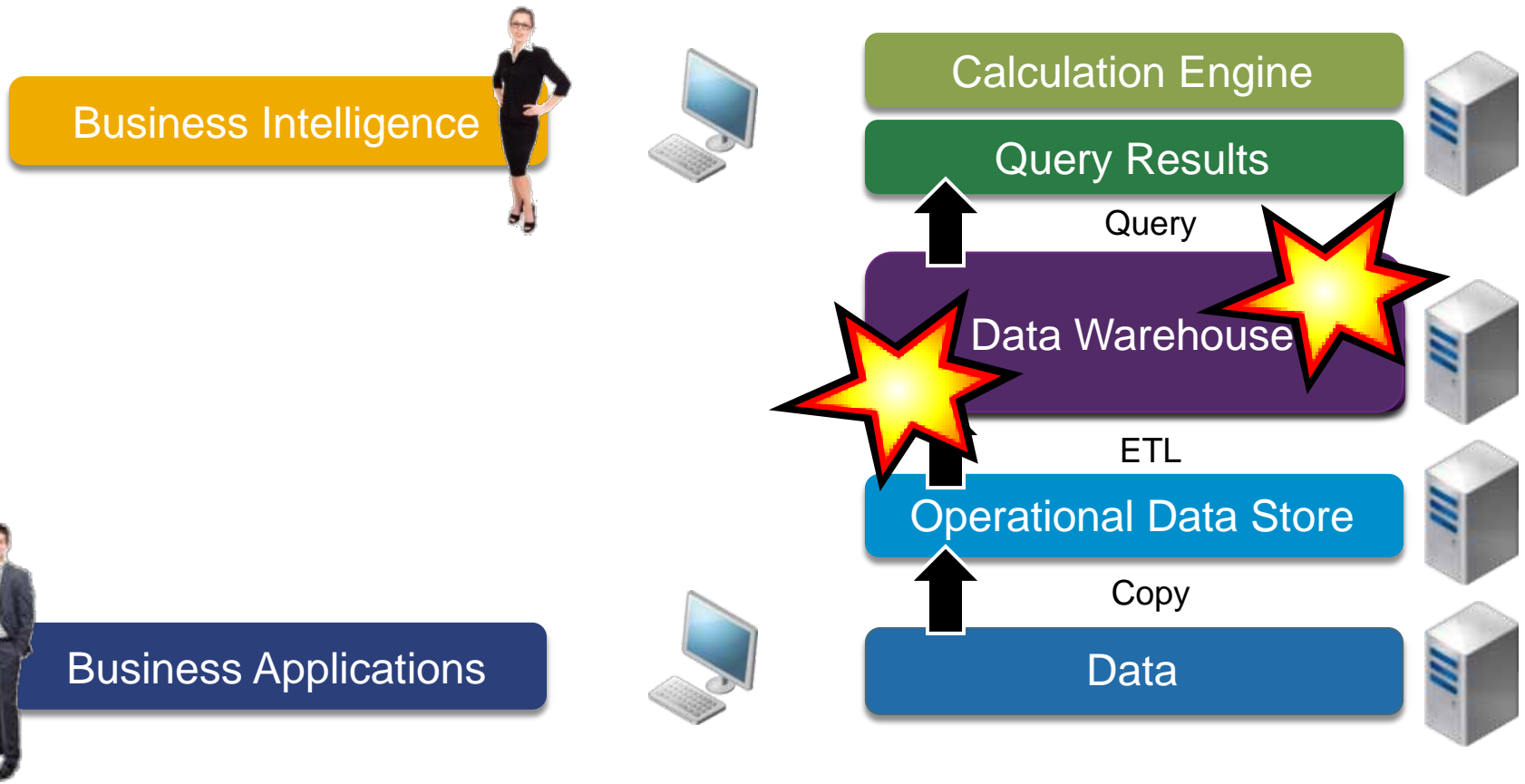
And shrinking, and
shrinking, and shrinking....

**Price/performance of
in-memory has
DOUBLED in last 9
months**

Column Databases

Up to 1,000x faster

More data in less space



Analytic Appliance

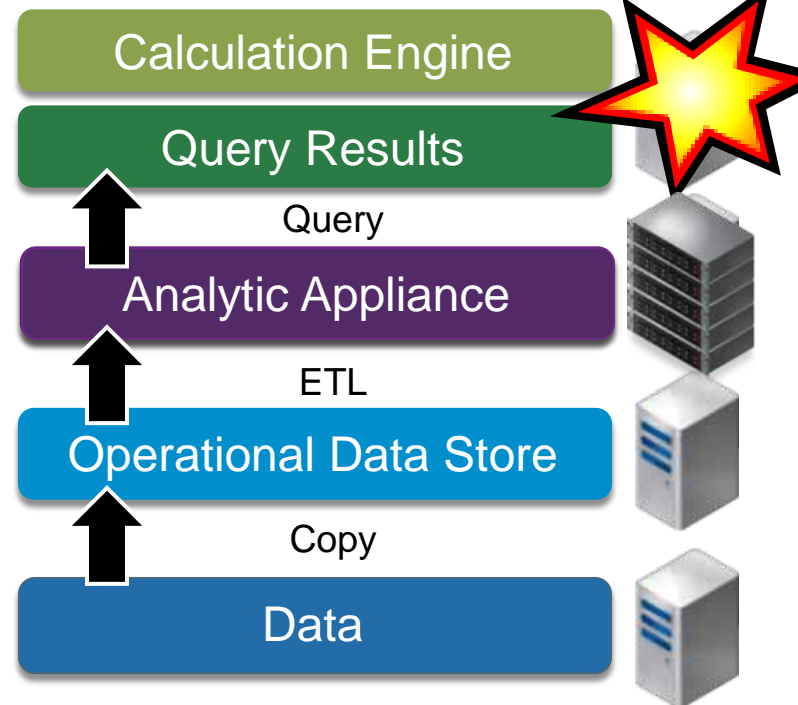
Up to 1,000x faster

Massively parallel, optimized for hardware

Business Intelligence

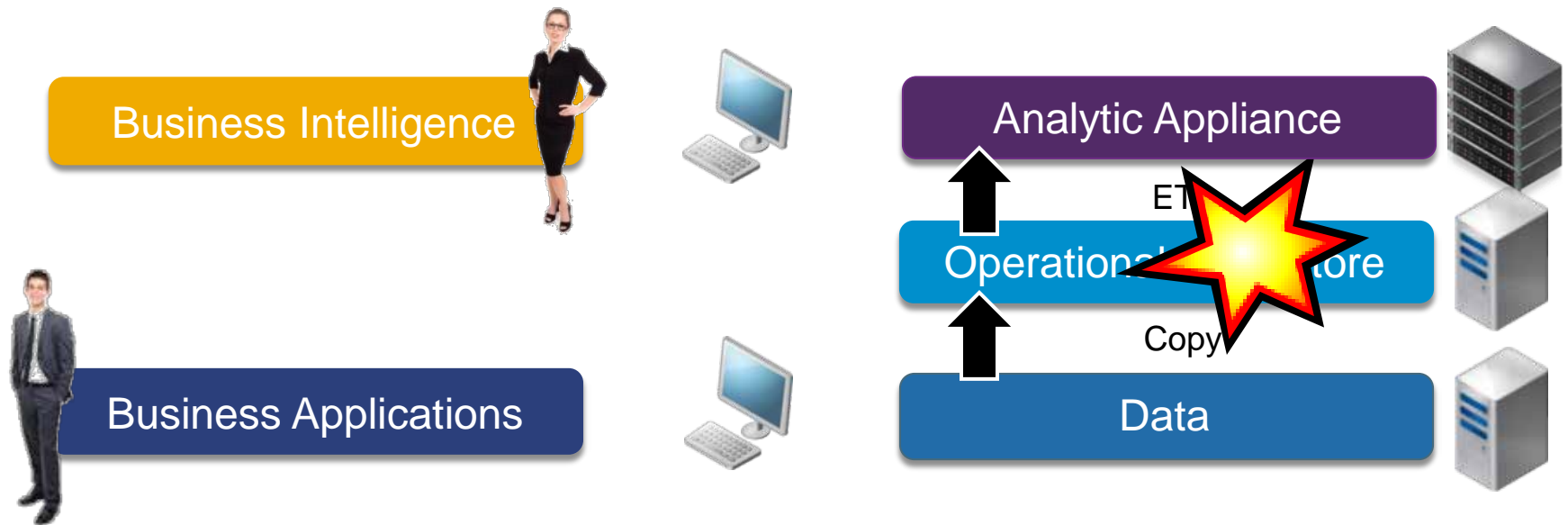


Business Applications



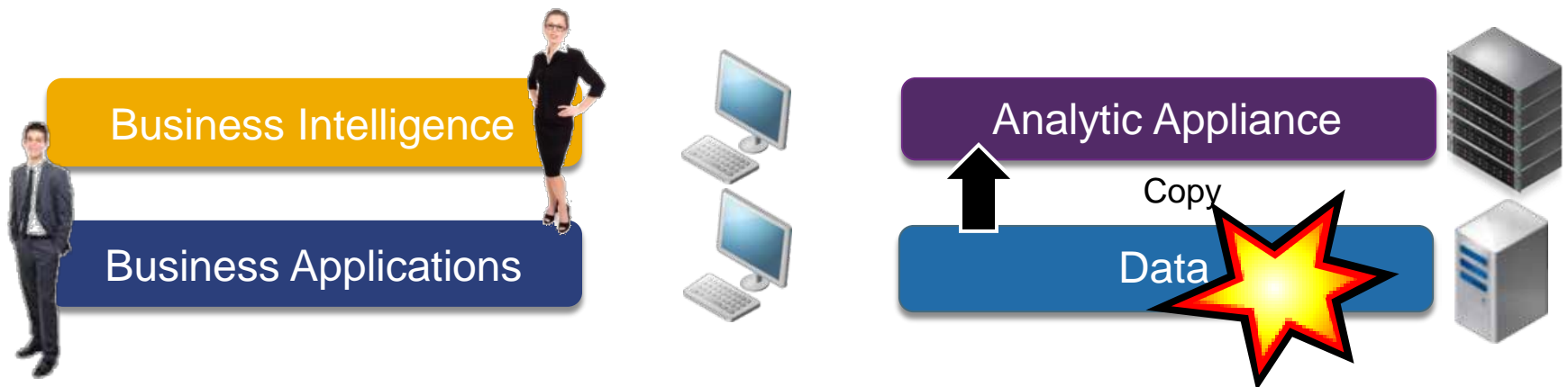
Real-Time Data

Real-time replication — why have a separate operational data store?



Operations and Analytics Together

Use a single appliance for both analytics and applications

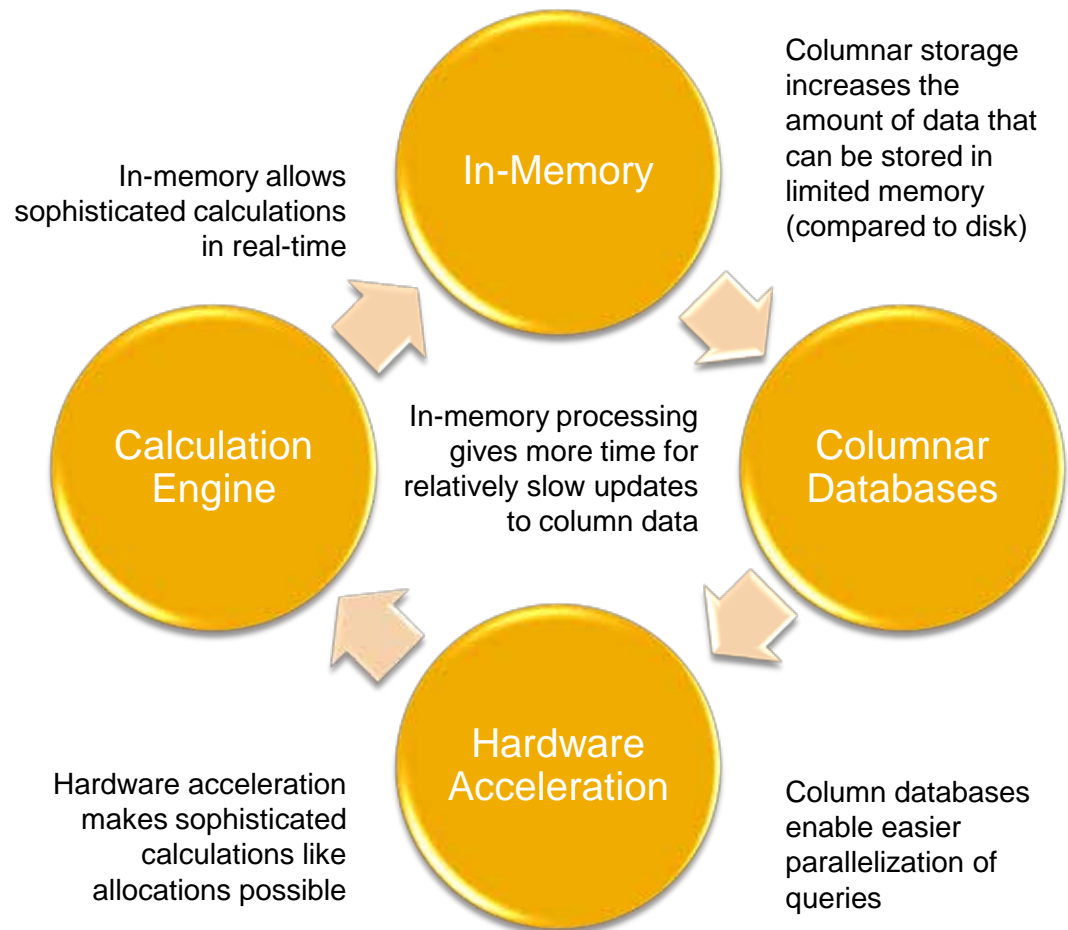


Real-Time on Big Data



Virtuous Circle of Technology

Each technology works well on its own, but combining them all is the real opportunity — provides all of the upside benefits while mitigating the downsides





"By 2012, 70% of Global 1000 organizations will load detailed data into memory as the primary method to optimize BI application performance."

- Gartner

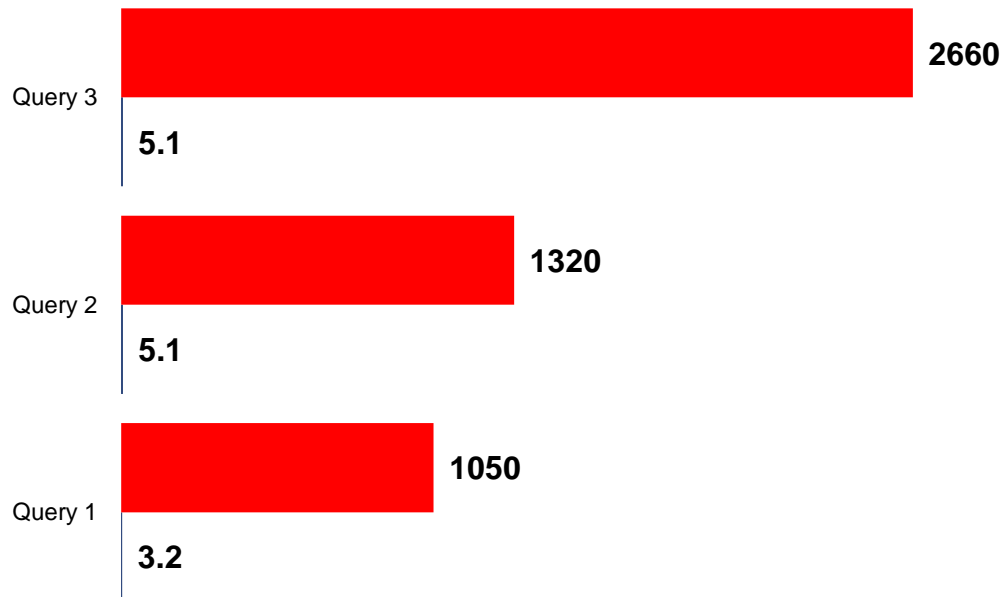
Large Bank – 1 Month of Customer Information

Data Compression with HANA (GB)



**6.3x Data
Compression**

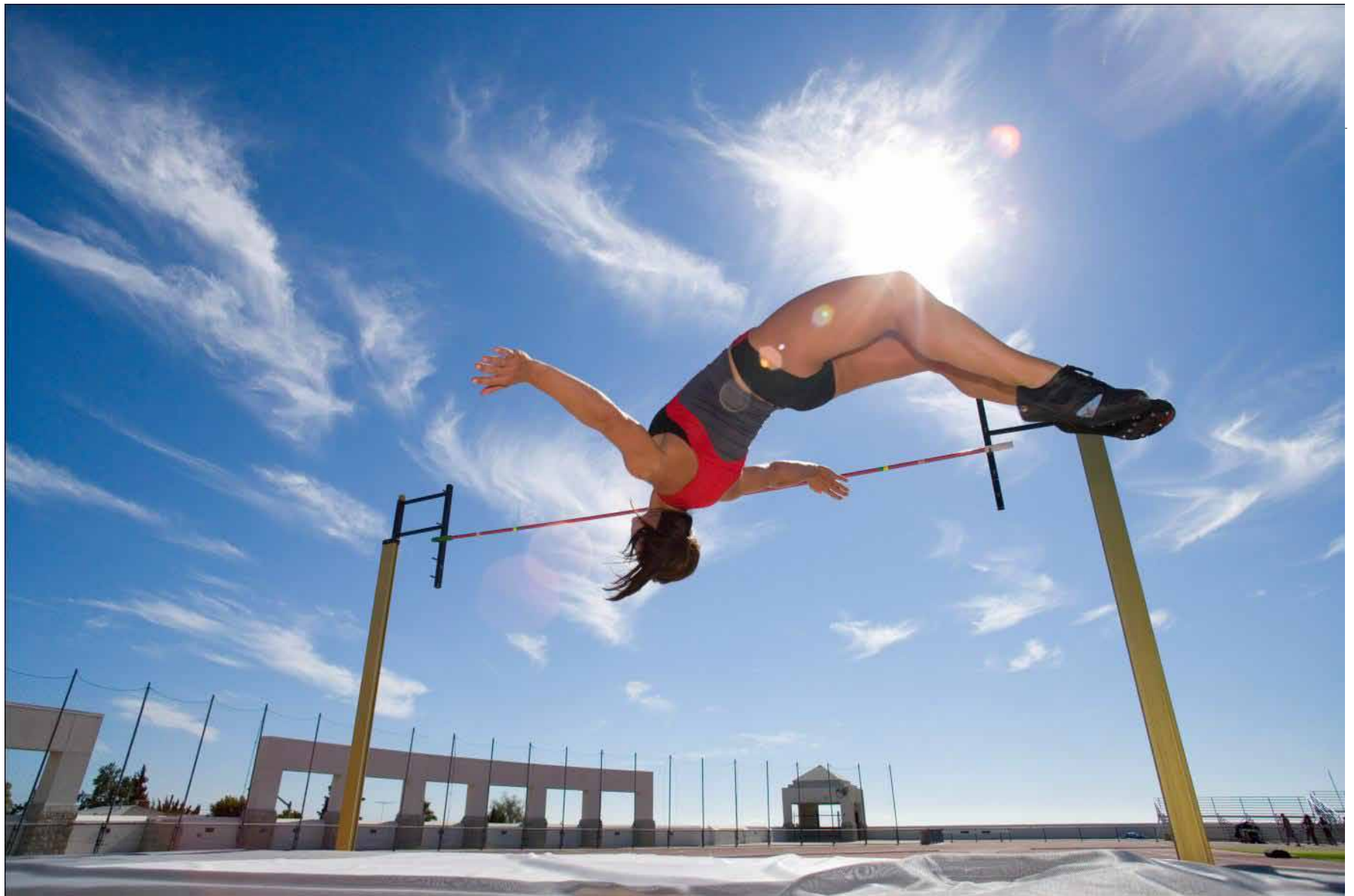
Query Run-Time (Seconds)



**No Schema Changes
Same Data
Same SQL
Immediate Benefits**

**369x Average
Query Speed-Up**





What About Flash Disk / SSDs?

	Capacity (GB)	Latency (μ S)	Bandwidth (MB/s)	IOPS	Cost/IOPS (\$)
Capacity HDDs	2,500	12,000	60	250	0.36
Performance HDDs	300	7,000	90	500	0.19
Flash (write)	64	300	100	5,000	0.02
Flash (read)	64	45	200	30,000	0.003
DRAM	8	0.005	3,200	500,000	0.0002

15X

Source: Sun Microsystems, AgigA Tech, Hennessy & Patterson, Gartner, Credit Suisse.

Storage Device

Latency (μ S)

Capacity HDDs	12,000
Performance HDDs	7,000
Flash (write)	300
Flash (read)	45
DRAM	0.005

9000X

Source: Sun Microsystems "Tuning Storage Subsystem for Databases."

Storage Device

Bandwidth (MB/s)

Capacity HDDs	60
Performance HDDs	90
Flash (write)	100
SSDs (read)	200
DRAM	3,200

16X

Source: AgigA Tech, Hennessy & Patterson.

Do More, Faster

“The time between ‘event’ and ‘action’ is rapidly closing.”

“In the past, managers could take weeks or days to make important decisions, however to effectively compete globally, some companies are making critical decisions in hours, minutes or even seconds”

Paul Barsch, 2009

“If things seem under control, you’re just not going fast enough.”

-Mario Andretti



In-Memory Computing is Like Digital Photography

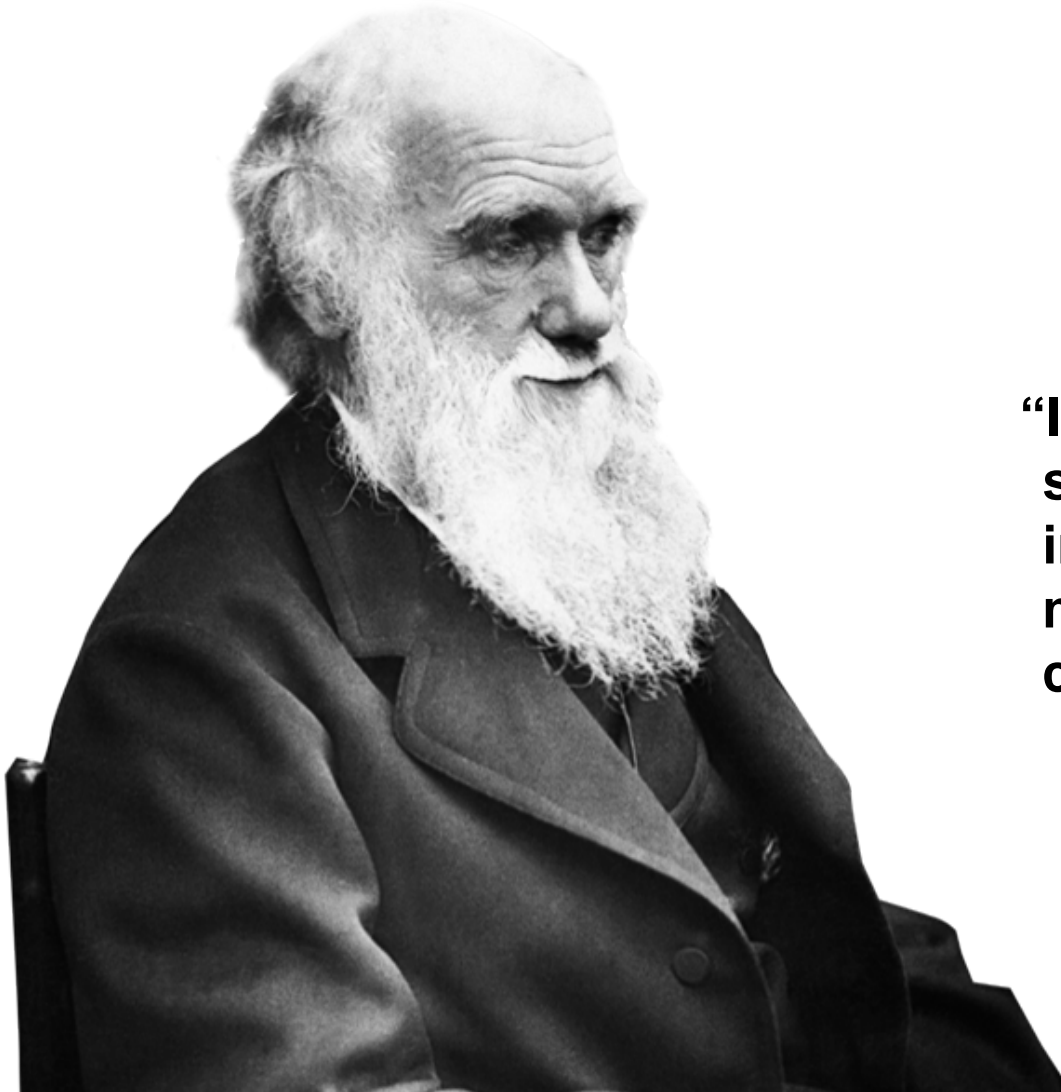


A transformative technology that slowly but surely upturns the whole industry



Faster, Easier, More Convenient
Evolved Faster Than The Alternatives

It's All About Flexibility and Evolution



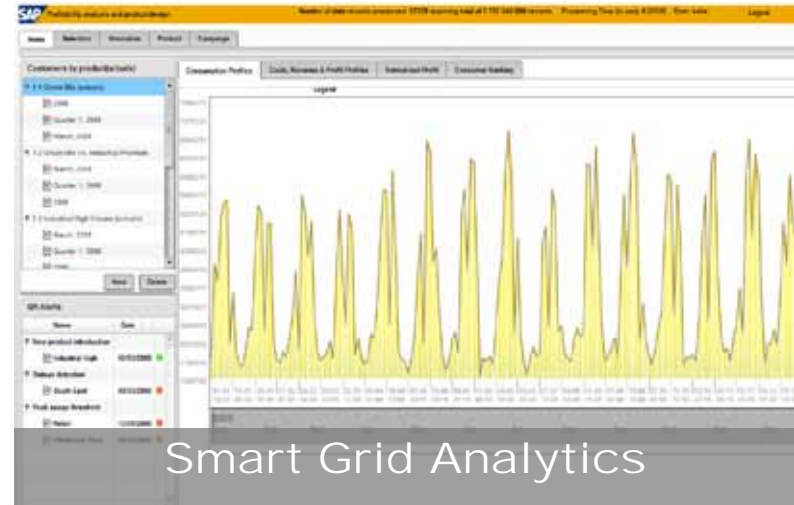
“It's not the strongest that survive, nor the most intelligent, but the one most responsive to change.”

Charles Darwin

HANA Applications Available in H2 2011/2012



Strategic Workforce Planning



Smart Grid Analytics

- COPA case (includes financial line item reporting)
- CRM & ECC Content (Q2 2011)
- Inventory Movement
- Billing Management
- Smart Grid Analytics
- SAP BW Powered by HANA
- SAP BPC Powered by HANA
- Order to Cash analysis
- Trade Promotions Management
- Sales Pipeline Analyzer
- Banking: Bank Analyzer
- Demand Signal Repository

20+ SAP Projects - H2 2011 for Ramp-up & GA Early 2012

HANA RDS Operational Reporting

Preconfigured software

Includes financial, sales, purchasing, shipping, and master data reporting

Rapid and affordable

Deliver in as little as 6 – 8 weeks, using SAP consulting

Flexibly priced

Clear path to real-time operational analytics

Ready for access by SAP

BusinessObjects, Excel, mobile devices...



**Fast, powerful
operational reporting**

SAP CO-PA Accelerator

Accelerate month-end process

Speed profitability reporting to accelerate financial performance and efficiency

Powerful insights

Flexible reporting to maximize profitability at customer, product, and SKU level

Easy deployment

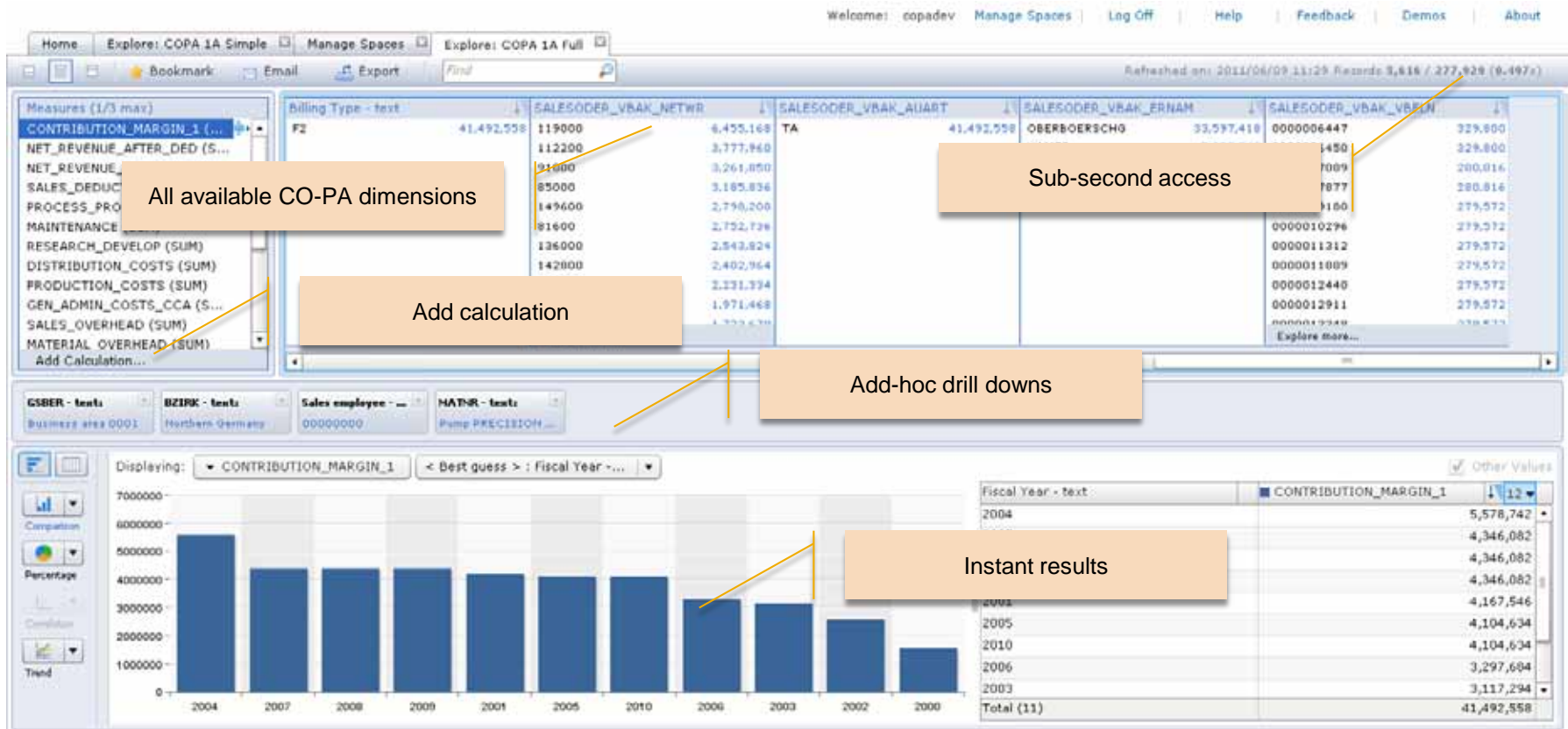
Easily deployed with no disruption



**Turbo charge
profitability reporting
and allocations**

Reporting with SAP HANA, option for profitability analysis with SAP ERP and Explorer

- ✚ All entities; all periods / multi-year / lifetime analysis; optional re-load of archived records
- ✚ Millions of records in sub-second; instant drill-down into all dimensions



SAP Dynamic Cash Management

Uses ALL data available

Open receivables, open payables, open shipments, purchase orders, etc.

From SAP and non-SAP systems

More accurate payment predictions

Based on actual customer history, not just payment terms

Track performance

By company, region, customer, etc.

Full cycle approach

Model & simulate impact of non-payment, re-integrate into pricing and contracts



**Real-time visibility
into your company's
cash position**

Cash Manager – Cash and Cash Equivalent

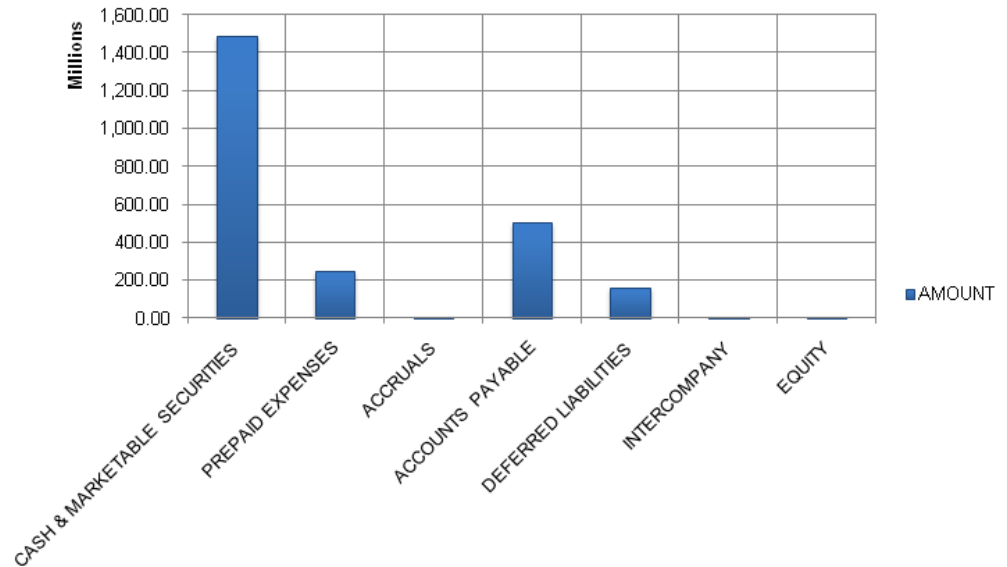


Cash Management

Overview Wednesday 16th of March

	Mio \$
Cash and Cash Equivalent	2,501.58
Currency Exposure	
CAD	169.99
ECD	20.30
JMD	14.57
Account Receivables	14.50
Account Payables	25.40
Open SO	
Open PO	
Treasury	
InHouse Cash	
Memo Records	
Short-term Investments	
Total	
Cash Pooling	

Cash and Cash Equivalent



Row Labels	SUM OF AMOUNT
ACCOUNTS PAYABLE	504,791,316.17

Cash Manager – AR/AP/Open SO/P Forecast



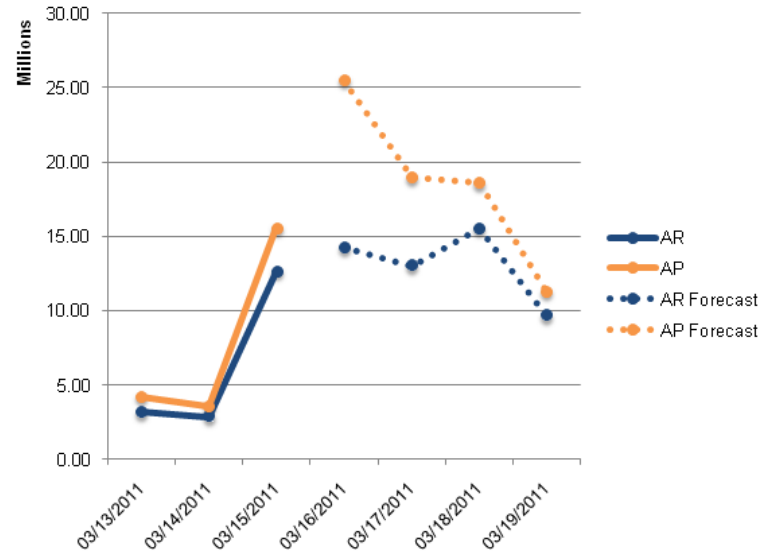
Forecasts based on past customer behaviour and detailed drill down

Cash Management

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Open SO	
Open PO	
Treasury	
InHouse Cash	
Memo Records	
Short-term Investments	
Total	
Cash Pooling	

Account Receivables/Account Payables



	Values			
Row Labels	AR	AP	AR Forecast	AP Forecast

Collection Manager



Home Insert Page Layout Formulas Data Review View EPM Data Manager HANA App

DSO_LABEL fx DSO

A B C D E F G H I J K L M N O

Collections Manager Overview

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31

Overview Wednesday 16th of March

DSO 21

Open \$47,797,444.21

Interest Loss \$73,522.59

Collection Worklist 600 items

Yesterday

Missing Expected Payments \$2,205.68

Broken Promise to Pay \$3,676.13

Unexpected Payments \$2,940.90

Payment Behaviors

Very Good Payer 3

Good Payer 200

Bad Payer 70

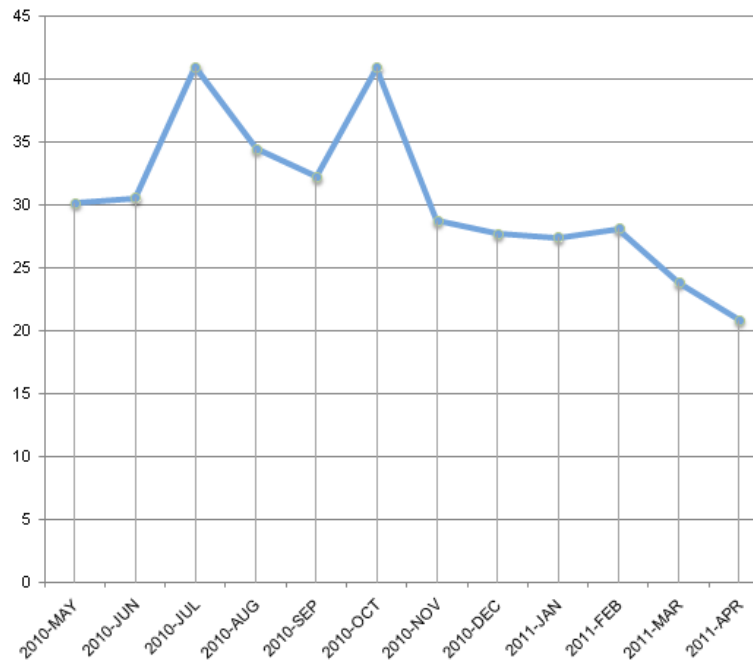
Very Bad Payer 20

Tasks

[Adapt Collection Group](#)

[Monitor Worklist Progress](#)

DSO



Row Label AVG OF DSO
2010-AUG 34

Conclusion

In-memory industry revolution

Every company in the industry heading the same direction

Don't be the last one shooting on film

HANA is leading the way

Built from scratch using the latest technologies

Beyond a database: the platform for business applications of the future

Extreme analytics without disruption to existing systems

It is real, and you can get started today

Thanks!

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