Analytics with Automation – Gotta have it!

Rebecca Levesque
21st Century Software

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Session OB




Abstract

Everyone talks about analytics but without Automation and Intelligence behind it, it's just reporting. In today's "full-speed ahead" digital world, there are limited staff and tools available that take advantage of what the Z/OS platform has to offer, so using analytics to automate is no longer optional…it's a must. Making the most of your resources, time and money using the proven strength and cost-effectiveness of the mainframe gives a competitive edge. Predictive knowledge, root cause analysis, actionable insights, and automation…. Now that's how you run a business! Join us at this session to learn how to address your challenges and understand how to give your business the advantage of Analytics with Automation.

About the speaker

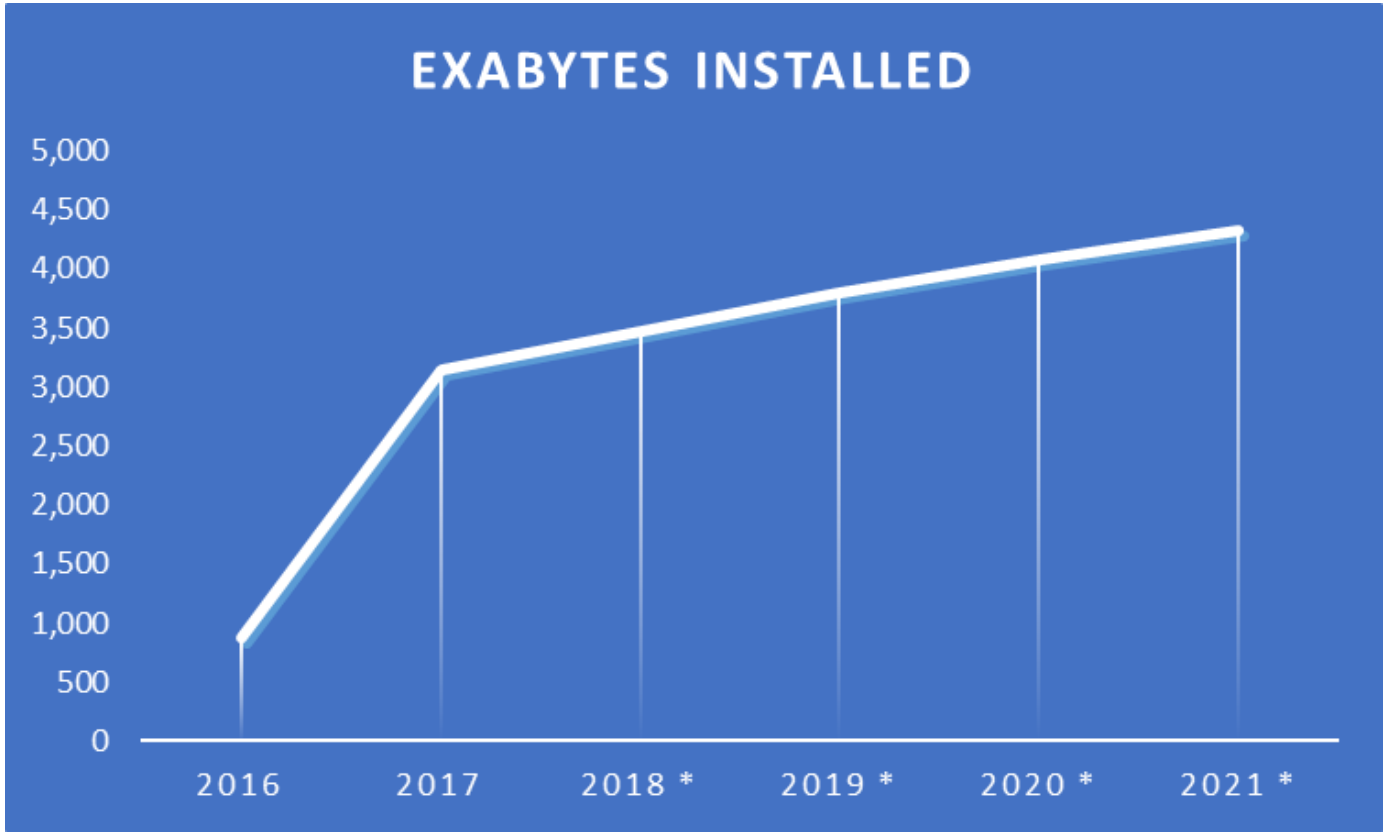
Rebecca M. Levesque is Chief Executive Officer of 21st Century Software and responsible for shaping the company's product strategy and vision. She has over 20 years of experience helping hundreds of companies establish resiliency and recoverability strategies from any disruptive event. Her knowledge and depth of experience is offered as a speaker at SHARE, IBM Technical University, IBM Systems Magazine, ACP, and DRJ. She is a published author in trade journals, white papers, and industry forums. Additionally, Rebecca has helped executives, storage managers, and technical architecture professionals leverage their existing storage technology investments while ensuring efficiencies across the enterprise.

Drowning in data

How much data are we talking about?

- Worldwide, in 2017 there were 3.1 zettabytes of storage installed
- Projections are to be at 4.3 zettabytes in just 3 years – a 38% increase

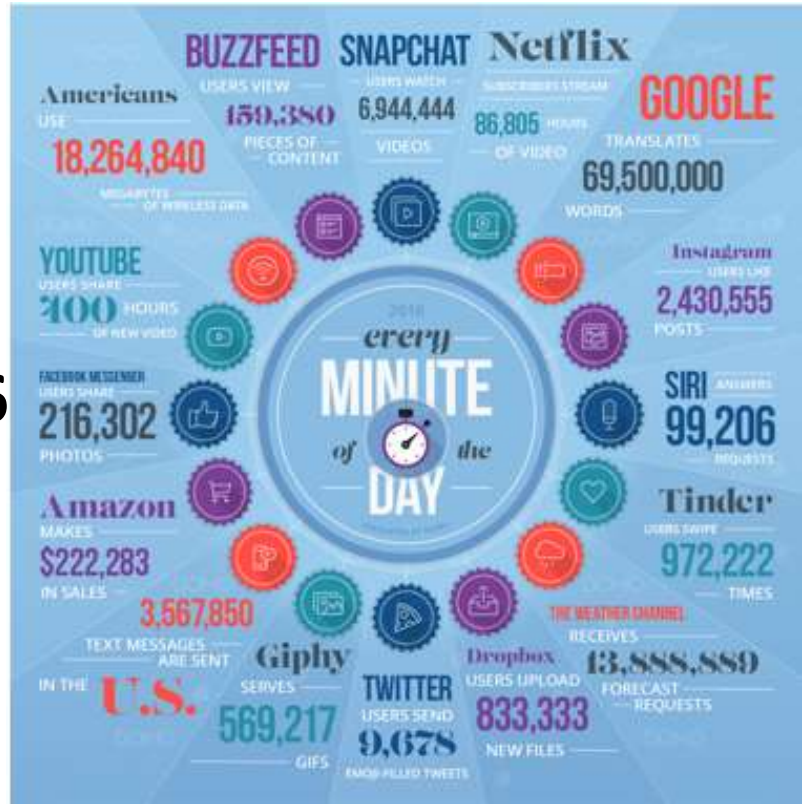
	Measure	Bytes
KB	KILOBYTE	1,000
MB	MEGABYTE	1,000,000
GB	GIGABYTE	1,000,000,000
TB	TERABYTE	1,000,000,000,000
PB	PETABYTE	1,000,000,000,000,000
EB	EXABYTE	1,000,000,000,000,000,000
ZB	ZETTABYTE	1,000,000,000,000,000,000,000
YB	YOTTABYTE	1,000,000,000,000,000,000,000,000



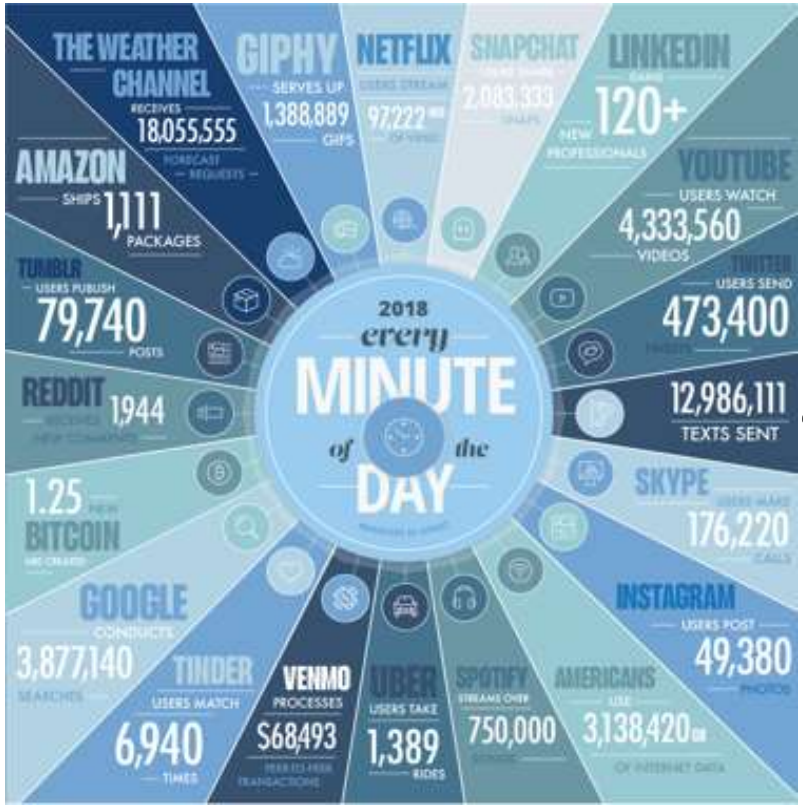
How do you put that data to work for your business?

This is what's happening every minute on the internet

2016



2018



- Texts have increased from 3.6M to 12.8 million
- Wireless data by Americans increased from 18,265 GB to 3,138,420 GB
- Weather Channel requests have increased from 13.8 million requests to 18 million requests

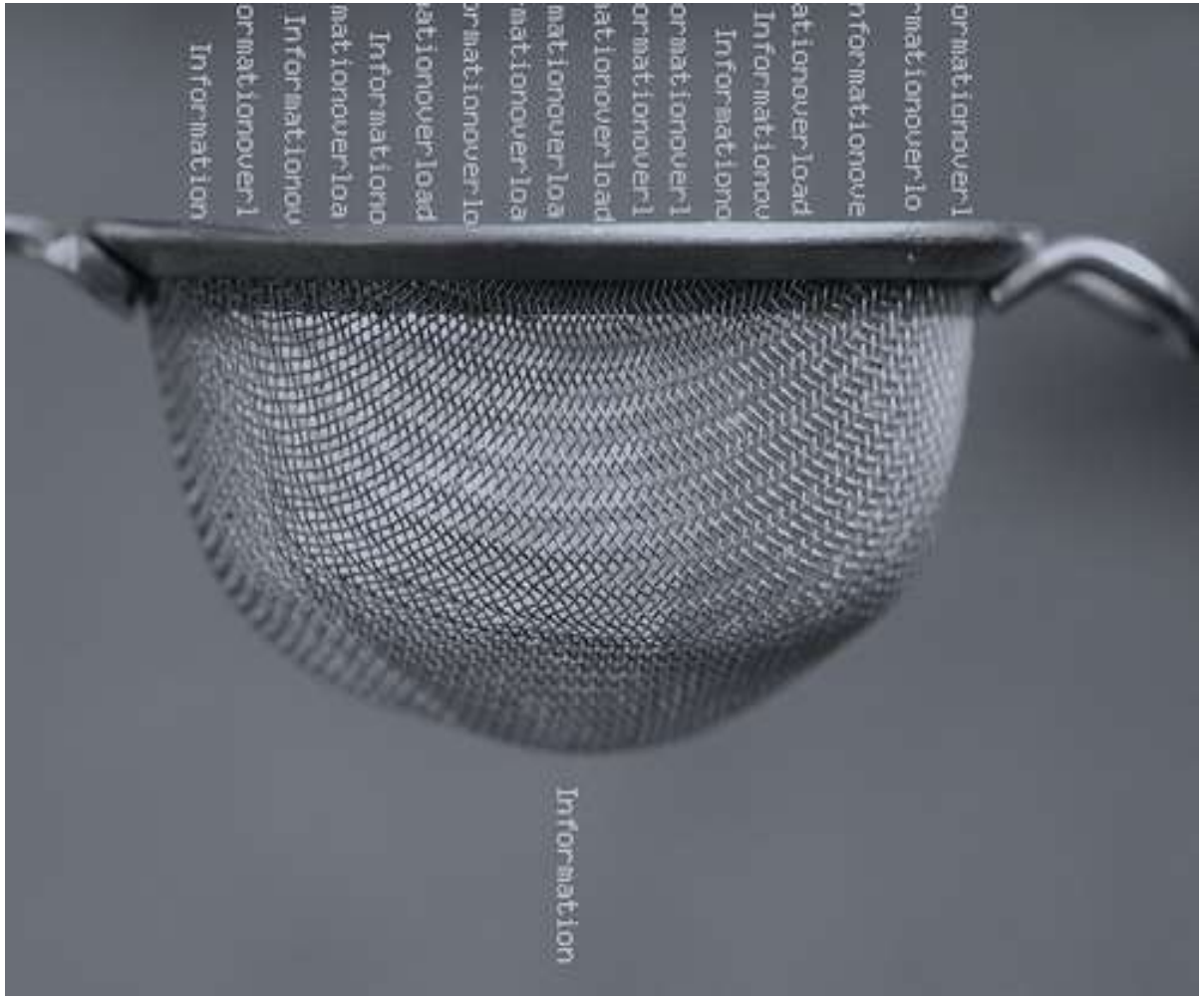
Information Overload

We are experiencing this as the old challenge of **information overload**, which although a rather "tired" term, is still an unsolved problem.

- **The underlying problem is a lack of models, analytics and skills** to deal with such overwhelming volume and detail.
- **An abundance of information is valuable only if it can be verified, analyzed and presented on a human scale.**

Unless we do that, our decisions will degrade.

Data and analytics will be embedded in successful digital business models and business processes **as opposed to being an "after the fact" addition** to business application data capture and processing.



Source: Gartner Leadership Vision for 2019: Data and Analytics Leader

Business challenges in a digital world

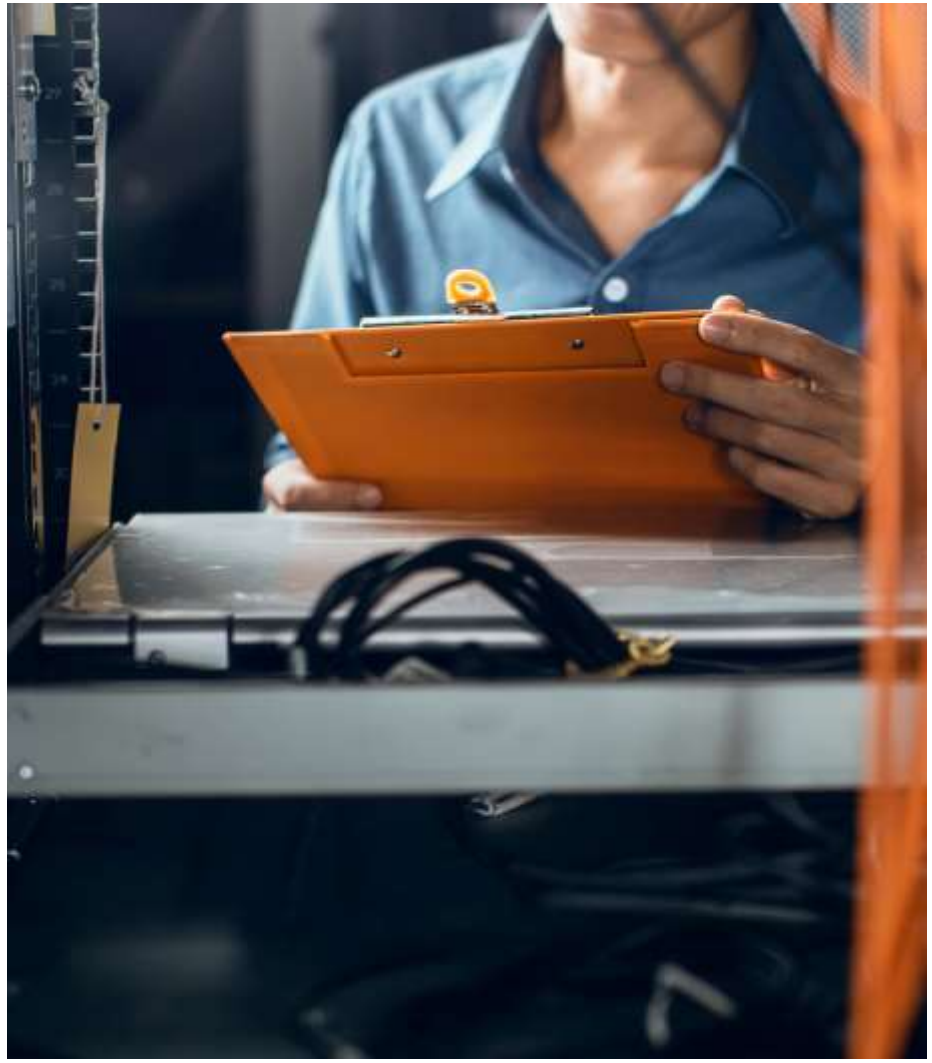
Business goals in a digital world

40% of CEOs see growth of the business as their top priority

CEOs expect digital revenue to grow 10.3% per year between 2017 and 2020

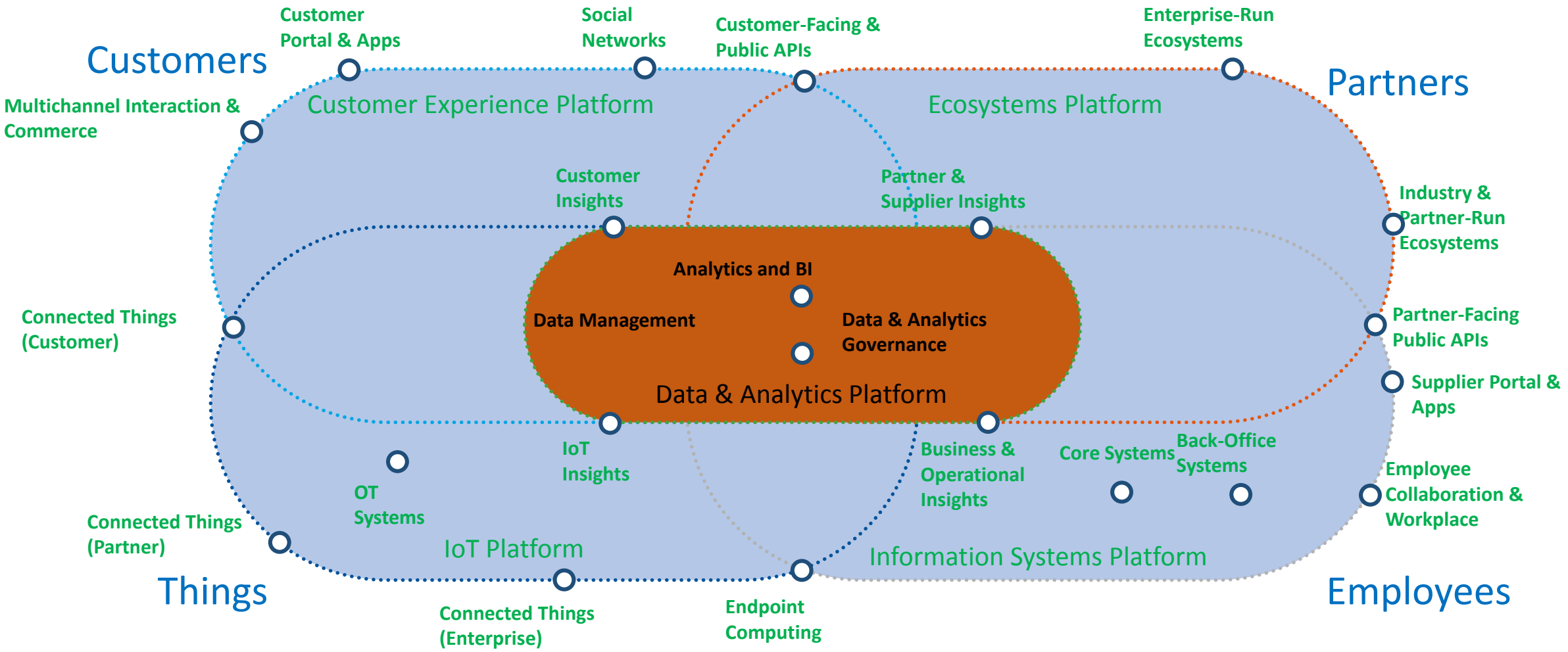
The business wants to:

- Drive business-led innovation
- Respond faster to changing business demands
- Align to common goals and objectives
- Protect the business



Source: Gartner Leadership Vision for 2019: Infrastructure and Operations Leader

Key Trend: Data & Analytics at the Heart of a Digital Business Platform



Source: Gartner Leadership Vision for 2019: Data and Analytics Leader

So what's the problem?

IT Operations goals are to improve quality and reduce cost while supporting growth and change

But…

- 53% of IT Operations cite managing technology changes as their biggest challenge, especially in large legacy environments
- 43% feel that insufficient skills and resources are their biggest issue
- 34% are most concerned about having insufficient capacity to absorb more change

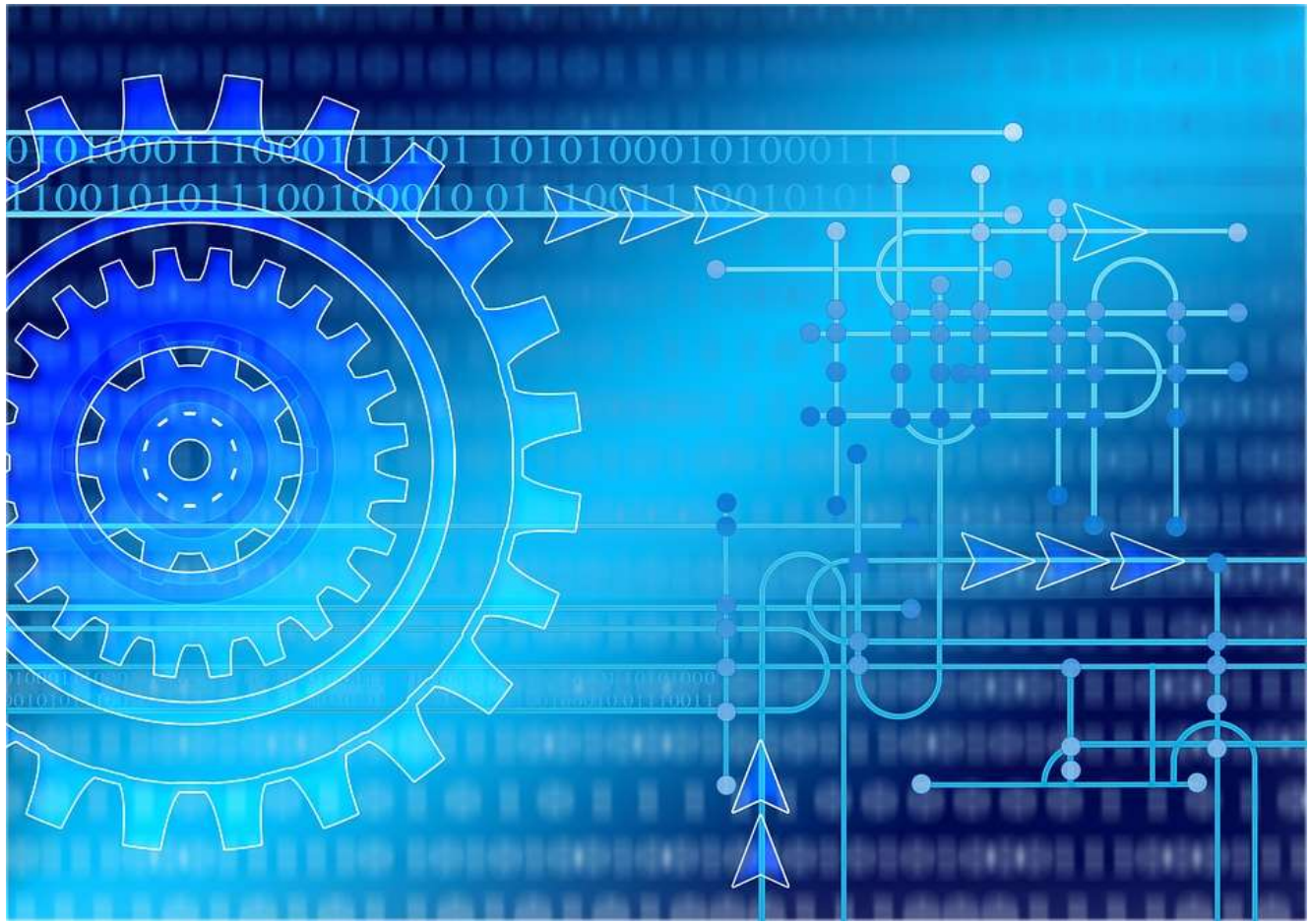
Source: Gartner Leadership Vision for 2019: Infrastructure and Operations Leader

This is the reality

- Scaling your digital business means *Infrastructure and Operations must align with the business*
- The ultimate *focus must be on the external customer*
- Quality improvement and cost reduction must be put in context and *aligned with the business products and services*
- Multiple approaches are required to *balance speed and risk in support of business outcomes*
- *'Legacy' is relative, and it's never-ending.* Today's gee-whiz technology will be tomorrow's legacy challenge.

Source: Gartner Leadership Vision for 2019: Infrastructure and Operations Leader

Using Analytics with Automation to Meet the Challenge



Get your measurements ready for digital

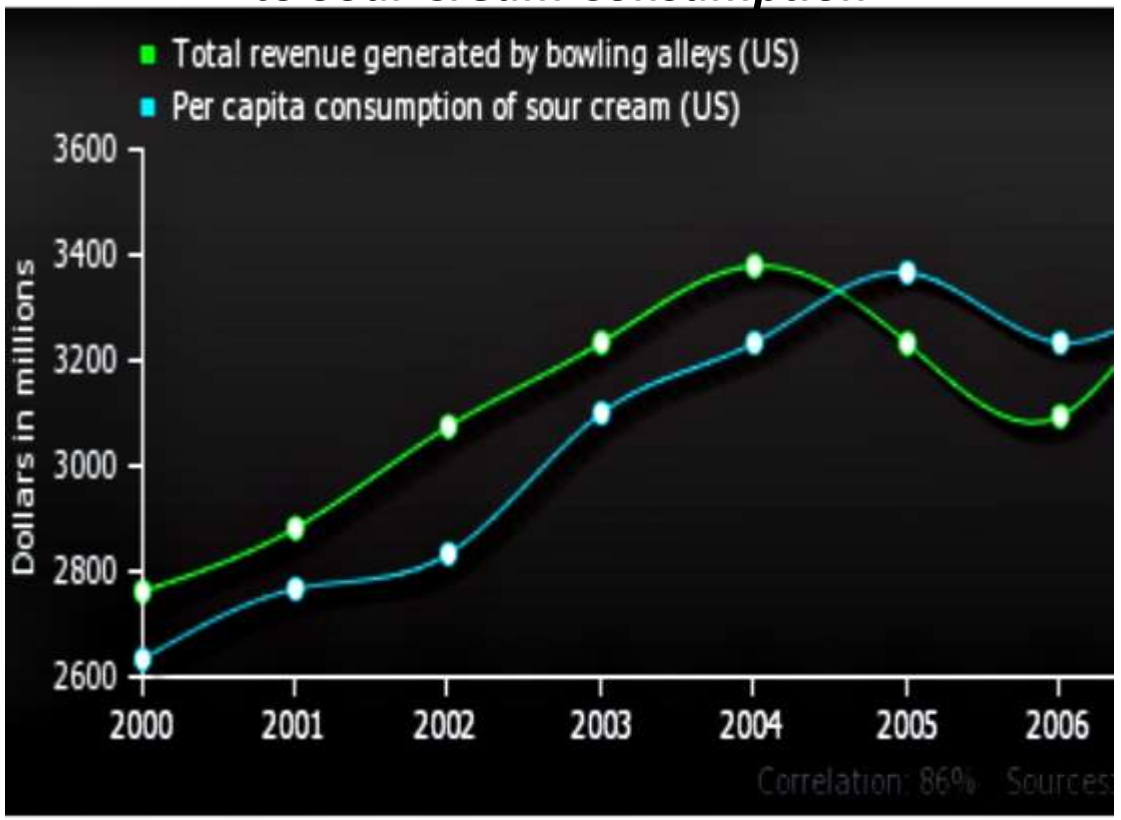
- *Don't just measure* Infrastructure and Operations adherence to standard service and quality expectations
- Instead, *demonstrate metrics that show Infrastructure and Operations' contributions to the IT mission:*
  - Enabling enterprise agility
  - Scalability
  - Customer centricity
- *Expose metrics* that demonstrate how IT as a whole *enables digital business transformation*

Source: Gartner Leadership Vision for 2019: Infrastructure and Operations Leader

Make meaningful outcomes from the data

- Don’t measure data just to produce a chart
- Use the data to align with and promote business goals
- Utilize metrics as a basis for continuous communication of business value
- Purposefully automate based on the results of the analytics

Annual Bowling Alley Revenue Linked to Sour Cream Consumption



Bridge the skills gap

- People are retiring, others move on to new departments or different companies
- ‘Tribal knowledge’ is disappearing
- *Rely on the analytics, not people, to know what’s happening on your systems*
- Use the analytics wisely to *automate with intelligence*

Make business decisions with the data

- Don’t guess; make *data-driven decisions* that move the business forward
- Use those decisions to *automate manual, repetitive processes*
- Use *predictive capabilities to plan for future needs*; be fiscally responsible

Digital initiatives are a team sport

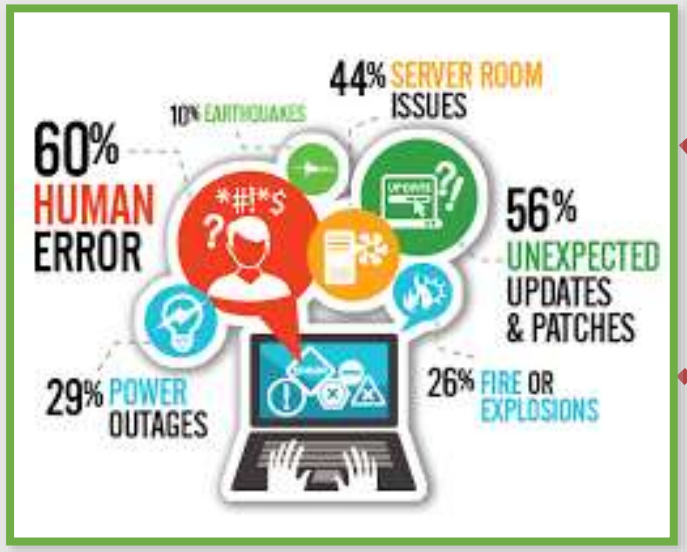
- Take an active role in powering activities that move the business forward, not just looking at where it's been
- Work with other business leaders to deliver on key business capabilities
- Create business value for the mainframe by aligning IT initiatives with the business
- Prove the value of the platform with key performance indicators

Apply the same principles to system data as business data

1. Have a vision for the outcomes you want from the data
2. Develop a strategy to manage and use the data
3. Decide on the metrics that are meaningful to your business
4. Manage the data; ensure accuracy and consistency for the system of record
5. Identify who uses the data; secure it
6. Build a process around it; how the data is collected processed and retained
7. Build the right infrastructure to support it, and plan for growth

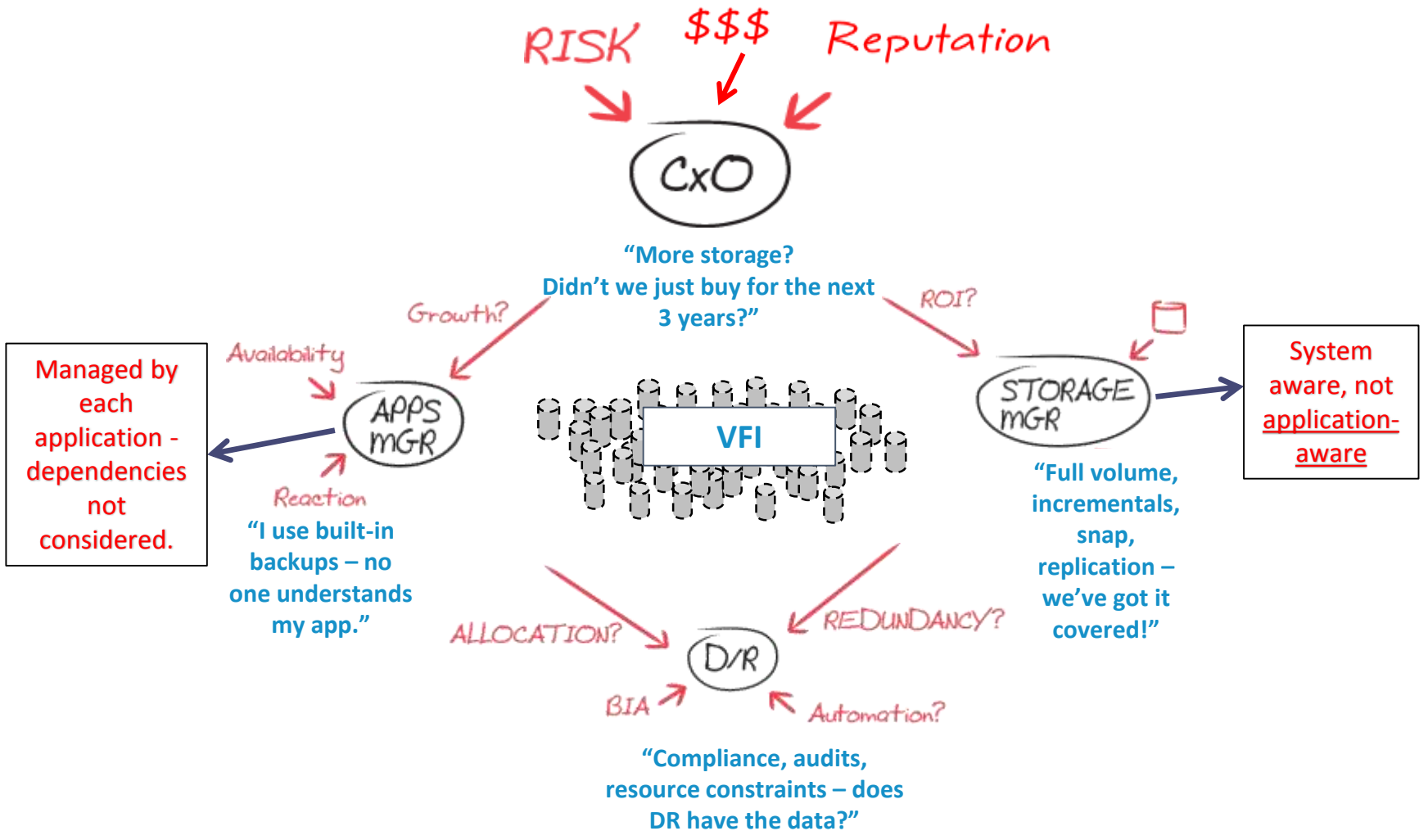
Purposeful Automation

IT Happens

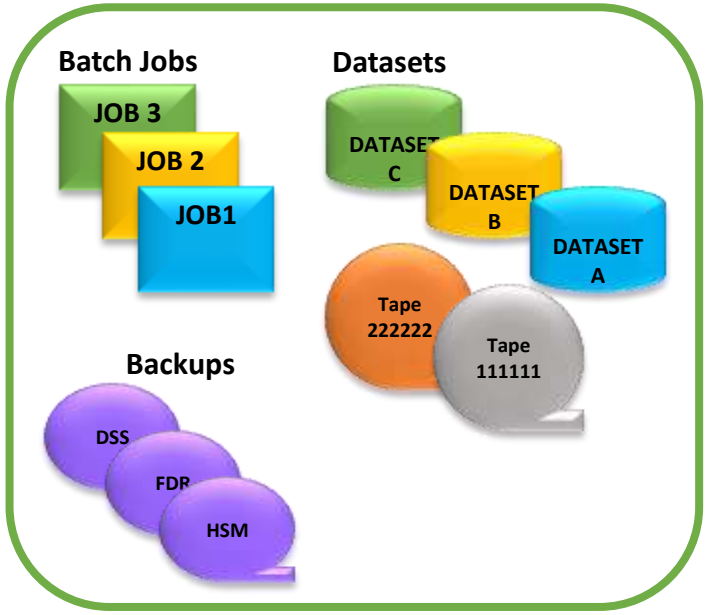

44% SERVER ROOM ISSUES
10% EARTHQUAKES
60% HUMAN ERROR
56% UNEXPECTED UPDATES & PATCHES
29% POWER OUTAGES
26% FIRE OR EXPLOSIONS

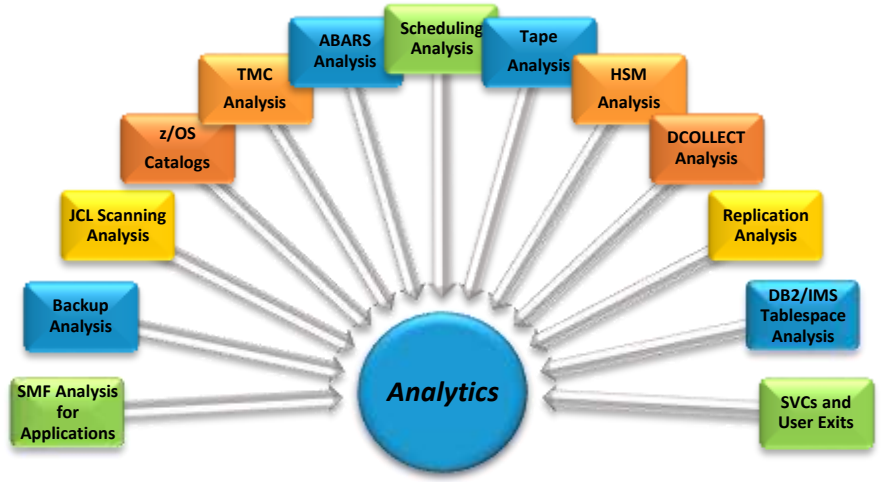
What's the problem with resiliency?

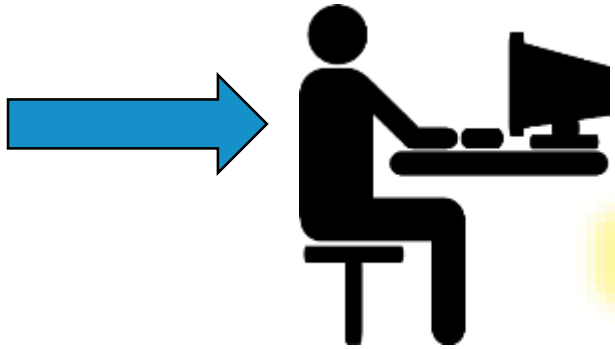
- Need a comprehensive view of applications across the mainframe
- Need to ensure continued resiliency and availability of critical business applications
- Limited resources with which to accomplish these objectives
- Understand the need to make decisions using analytics for faster time-to-value and take a seat at the table



Automating resiliency







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What's the problem with allocations?

```
REPORT RANGE 01/17/2018 - 02/14/2018 JOB EFFICIENCY - SUMMARY TABLE

* XYZ Co. HEALTH CHECK 2018                                    AN ICE-PAK SPACE CUBE REPORT

TOTAL NUMBER UNIQUE JOB NAMES:      14,634        X37 ABENDS IN REPORT PERIOD:    274
TOTAL OLD DATA SETS:     711,947

  TYPE          TRACKS            TRACKS          ALLOCATED-      NUMBER NEW      AVG TRKS          AVG TRKS
ALLOCATION  ***ALLOCATED***    ***UNUSED***     *NOT OPENED*     ***USES***  ***ALLOCATED***    ***UNUSED***
PERMANENT:    6,828,577,528   4,736,776,713                0        578,025           11,813           8,194
TEMPORARY:    2,059,052,311   2,016,860,565                0        167,096           12,322          12,070
```

- An average of **9 X37 abends** per day cause processing delays (missed SLAs) and reruns
  - ***Total Storage allocates the accurate amount of space up front – reducing space abends due to over or under allocations, and overhead for space recovery intercepts***
  - ***Started tasks are excluded from analysis, so log switches aren't in total abends***

- On average, over **233 million** tracks were allocated but unused per day**.** Space release may be enabled through JCL or SMS, but initial over allocations require DASD to be available – *Space release occurs **after** job end and incurs additional overhead*
  - ***Total Storage reduces the need to over-provision storage groups because of inefficient, inaccurate allocations***

No one has time to fix all their JCL

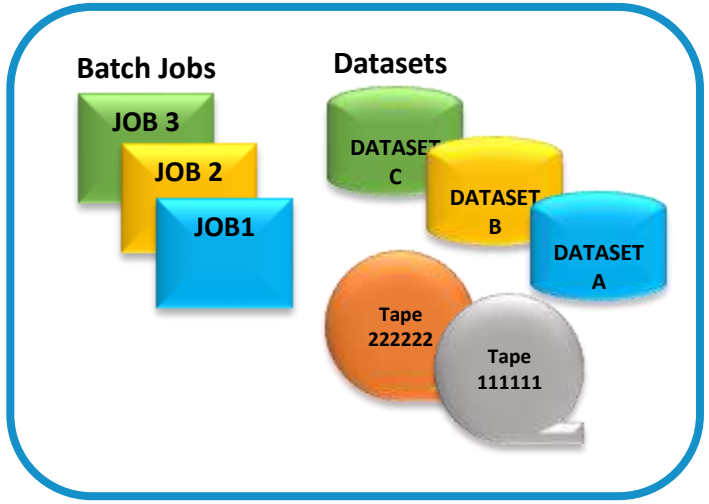
REPORT RANGE 01/17/2018 - 02/14/2018 JOB EFFICIENCY - SUMMARY - FILTERED RUN DATE 03/02/2018 PAGE 1
* XYZ Co. HEALTH CHECK 2018 AN ICE-PAK SPACE CUBE REPORT

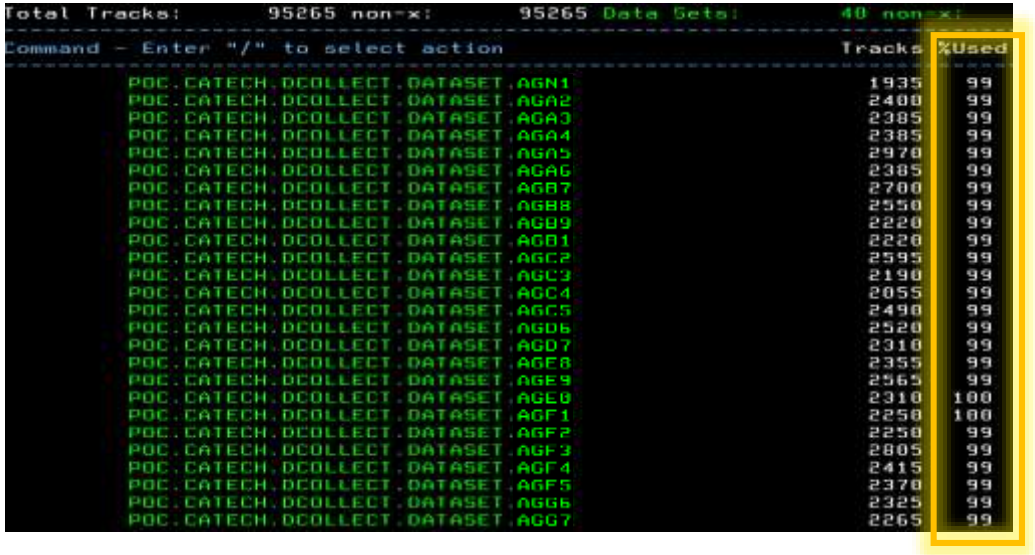
JOBNAME	TYPE	TRACKS *ALLOCATED*	TRACKS ***UNUSED**	EFFICIENCY ALLO	EFFICIENCY TIME	NEW *USES*	NOT OPENED	OLD D SETS
PRODYV02	PERMANENT	812,820	812,820	0.0	0.0	104	0	72
	TEMPORARY	0	0	0.0	0.0	0	0	
PRODYV03	PERMANENT	812,820	812,820	0.0	0.0	104	0	72
	TEMPORARY	0	0	0.0	0.0	0	0	
PRODLLLB	PERMANENT	4,024,764	4,018,286	0.0	0.0	6,286	0	8,057
	TEMPORARY	3,438,435	3,436,522	0.0	0.0	687	0	
PRODZES2	PERMANENT	0	0	0.0	0.0	0	0	286
	TEMPORARY	6,959,640	6,848,856	0.4	0.0	322	0	
PRODRMIB	PERMANENT	743,550	743,525	0.0	0.0	169	0	44
	TEMPORARY	7,312,670	7,312,670	0.0	0.0	287	0	
PRODXVAK	PERMANENT	5,580,360	3,570,715	10.4	0.0	206	0	214
	TEMPORARY	0	0	0.0	0.0	0	0	
PRODRDB1	PERMANENT	361,200	223,457	11.0	0.0	32	0	1,202
	TEMPORARY	6,244,590	6,084,571	0.7	0.0	774	0	

- Allocation Efficiency Detail reporting shows that JCL is copied, or common procs are used, without regard for individual dataset space requirements. Over allocations are reproduced exponentially
- Calculation of true requirements is rarely done resulting in over or under allocations, and X37 abends

Total Storage allocates the accurate amount of space for a dataset based on historical sizing data up front – reducing space abends due to over or under allocations, and overhead for space recovery intercepts

Automating storage management





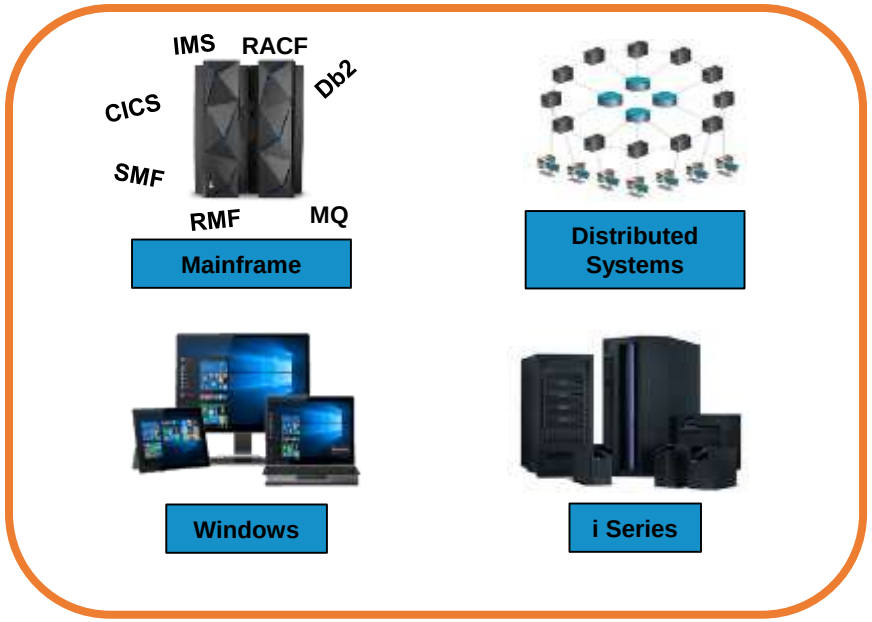
What's the problem with performance and capacity?

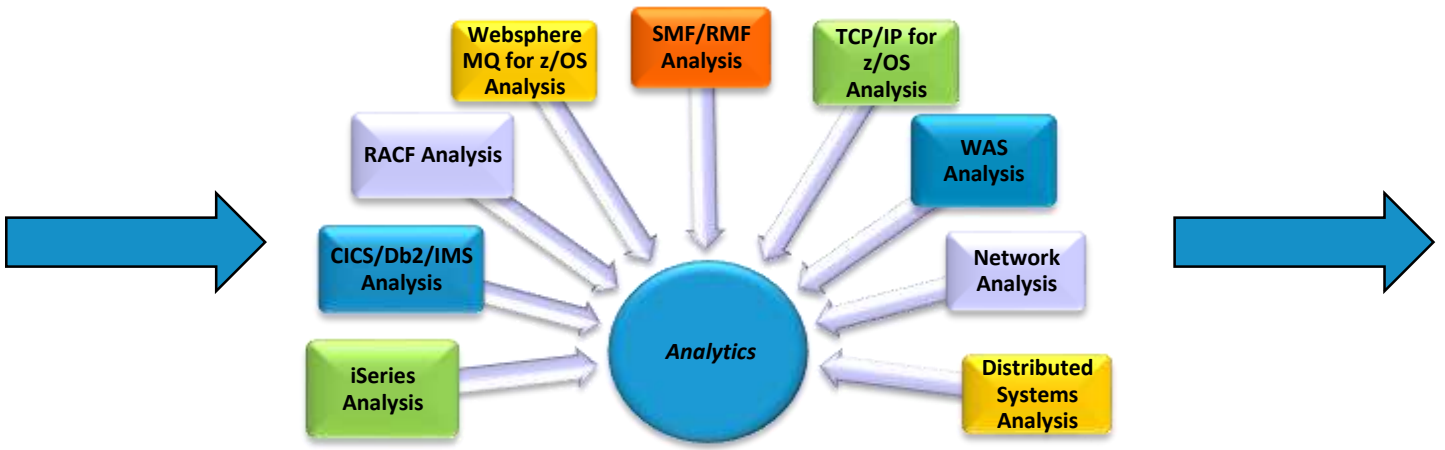
Challenge: Db2 performance has been normal. But recently there were a few **CPU spikes** and quite **a few time-outs** over last 3 consecutive days.

Challenge: It has been noticed that the nightly batch jobs could not finish processing on time with hours of delay. Online CICS systems could not be up running on time because the databases needed were still on hold to be processed by the batch jobs.

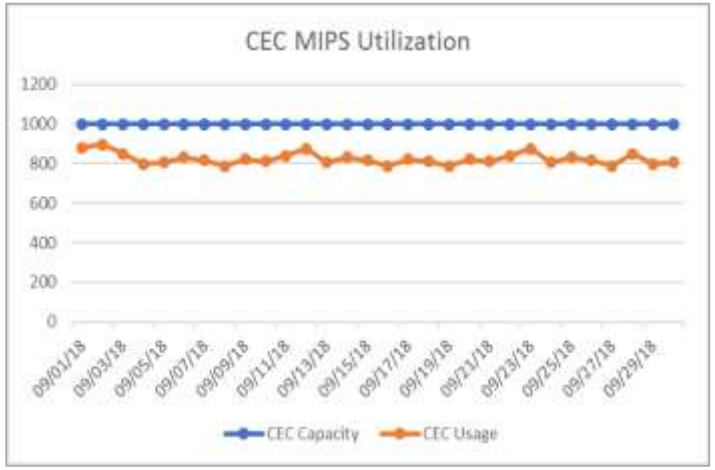
Challenge: Customer has a mission critical business application which often **encountered intermittent time-outs or unexpected slow response time**. The issue could not be resolved for quite some time.

Assuring resources

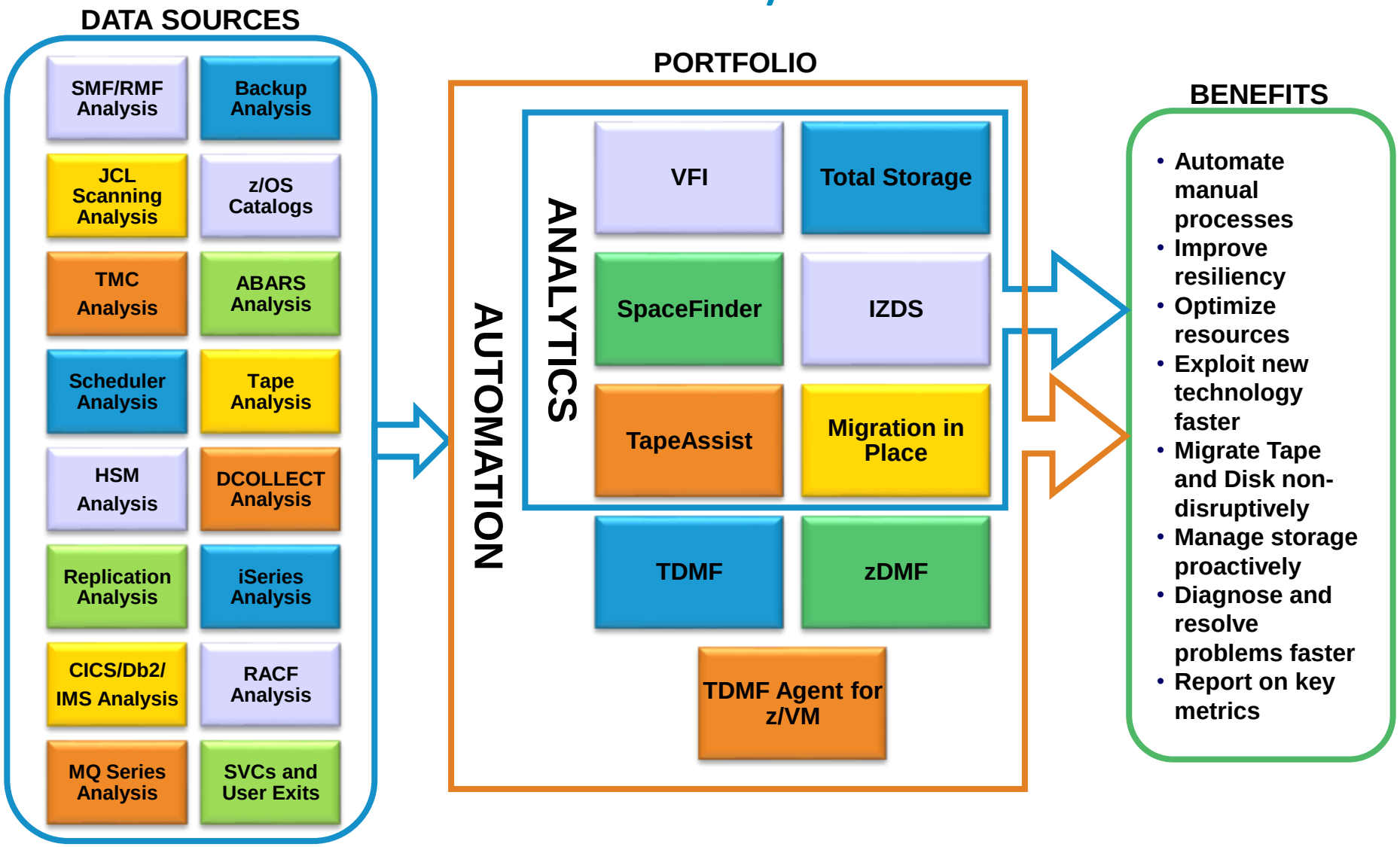




Monthly SLA Report	
September 2018	
Service	**Service met**
Onlines available	100%
Batch completion	100%
Reports available	100%
Transmissions completion	100%
Databases available	100%
Statement completion	100%



How does 21st Century Software do it?

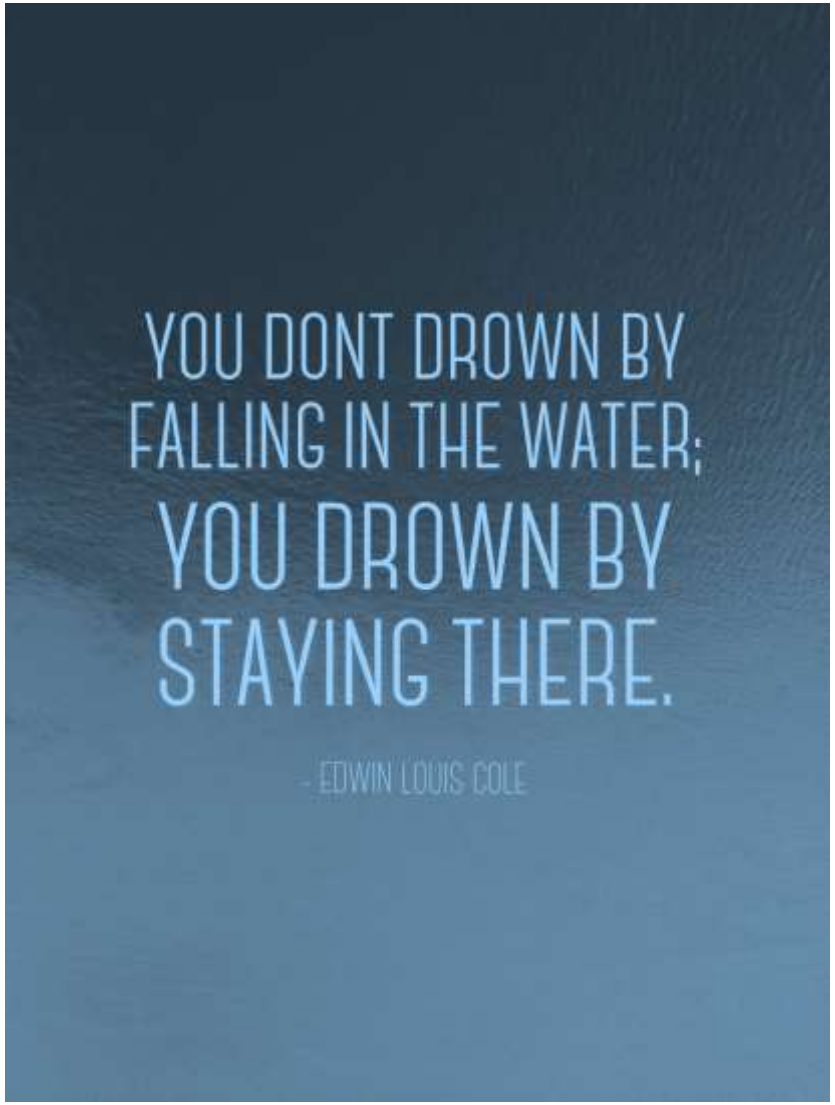


Leverage the power of the Z environment using up-to-date information for critical decision-making, automation and root cause analysis

Turn around, don’t drown in the data!

- It’s overwhelming and it’s frustrating but….
- With the right strategy and tools, you can do it!
- Have a plan of attack and just get started….

Don’t stay there!



Let us show you how

- Reduce risk by using Analytics with Automation to meet business resiliency SLAs
- Contain costs by using curated data for business-centric, credible planning information
- Bridge the skills gap by embedding intelligence into the automation

What you should do now

- 5-point Risk Assessment
- Comprehensive analysis
- No obligation Health Check
  - Comprehensive batch resiliency and efficiency

Rebecca Levesque
RebeccaL@21csw.com

Join us at our other sessions to learn more about putting analytics to work

Air Gap Risk Awareness: Batch is Mission Critical (DJ)
Stream: Storage Management
Room: Monza
Time: Wednesday 09:30 - 10:30

Conquer performance challenges with IBM Z Decision Support insight and analytics (OL)
Stream: System Automation, Monitoring and Analytics
Room: Magny Cours
Time: Wednesday 12:00 - 13:00

How to perform Capacity Management and Planning on IBM Z (OM)
Stream: System Automation, Monitoring and Analytics
Room: Magny Cours
Time: Wednesday 14:00 - 15:00

We want your feedback!

- Please submit your feedback online at ….
  - http://conferences.gse.org.uk/2018/feedback/OB
- Paper feedback forms are also available from the Chair person
- This session is OB