



Impacting the future of the enterprise technology ecosystem

z Systems - It's Been a Bumpy Ride!

zNextGen Project Opening and Keynote

Session 18050

Monday, February 29 - 3:15 - 4:15pm

Room 302C

Paul R. Robichaux, NewEra Software, Inc.



#SHAREorg



SHARE is an independent volunteer-run information technology association
that provides **education, professional networking and industry influence.**

- One of the primary missions of those charged with the responsibility to enhance and sustain the operational availability and integrity of the z Enterprise and its z Systems is to maintain their currency in both overall IT Server Market Trends and changes that specifically impact the z/OS environment. Such individual currency helps organizations adapt their IT strategies in ways that best fit the needs of all IT users and aids them in their long term effort towards reducing the Total Cost of z Systems Ownership (zTCO).
- This presentation, an update to one presented at SHARE in San Francisco and the IBM zUniversity in New Orleans in 2012/13, will provide fresh insight into the “Ups and Downs” experienced by hardware, software and business service providers as they manage the shift to “Hyper-Scale”, increasing Cloud-based Systems of Record, all in an effort to satisfy the apparent, insatiable demand for service that is resulting from the never ending introduction of global systems that intend to engage users at every possible commercial and/or social entry point.
- Paul R. Robichaux is CEO and co-founder of NewEra Software, Inc. He served as the Chief Financial Officer of Boole and Babbage for the ten years immediately preceding his co-founding of NewEra in 1990. He holds a BS in Accounting and a Masters in Business Administration from a Louisiana State University and is a Certified Public Accountant.
- The corporate mission of NewEra Software is to provide software solutions that help users avoid non-compliance, make corrections when needed and in doing so, continuously improve z/OS integrity.

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Hello! My name is Paul.

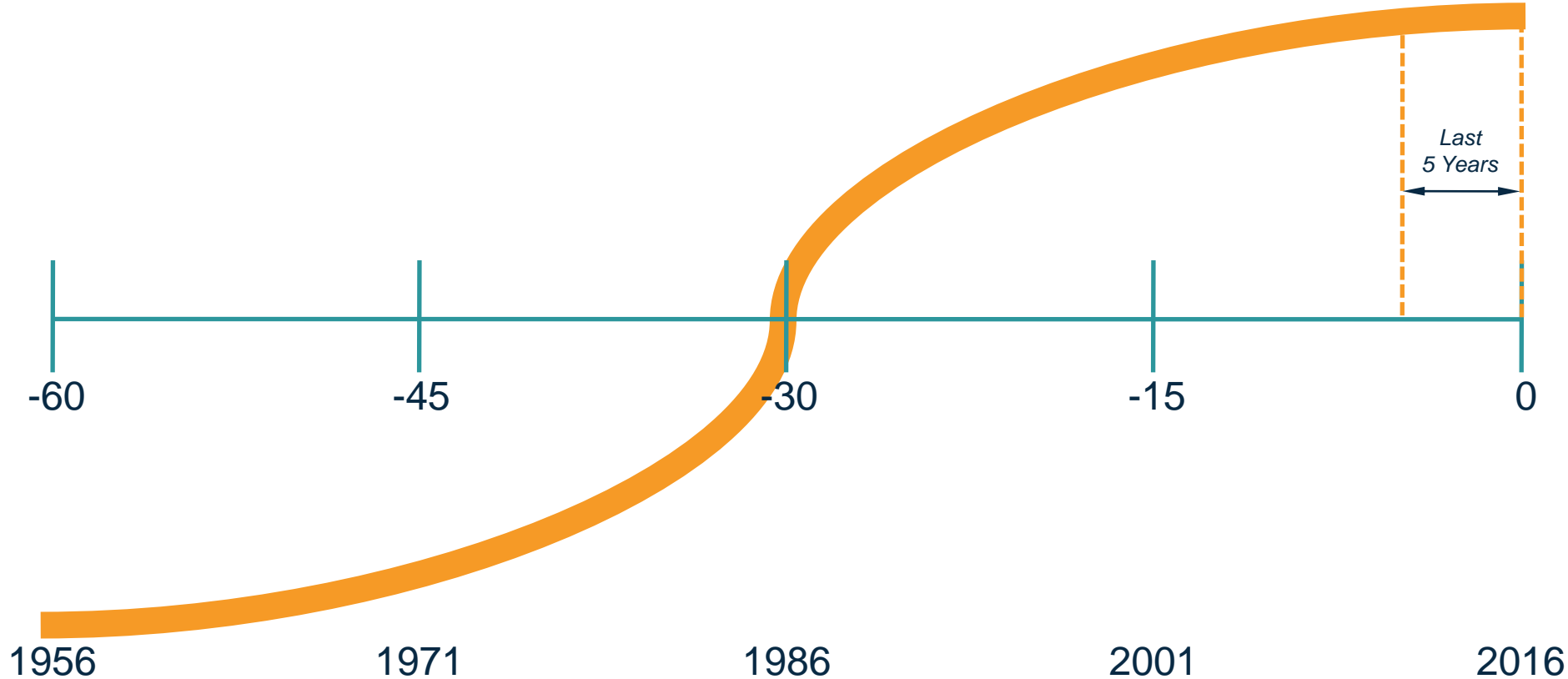
*I'm a Mainframer
and*

Very proud of it!

*I like to think of myself as
a citizen
in the z Community!*



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[Mainframe Photo Album](#)

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International Business Machines Corporation (IBM) ★ Watchlist

122.22 **+1.26(+1.04%)** NYSE - As of 4:02PM EST

After Hours: **122.00** **-0.22 (0.18%)** 6:19PM EST

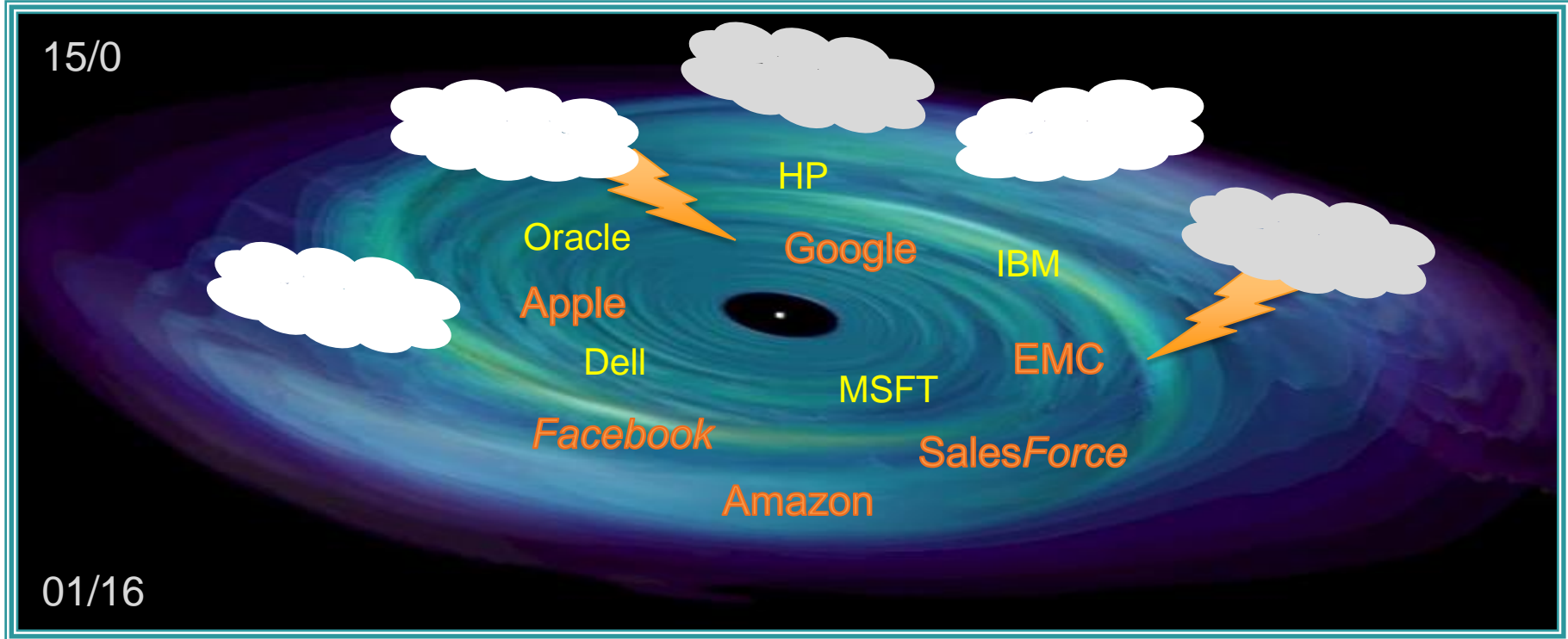


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[01/28/2016 - View Update Link](#)

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Don't Nobody Pick on Moola:

The Mainframe Cash Cow!

Business jargon for a business venture that generates a steady return of profits that far exceed the outlay of cash required to acquire or start it.

Many businesses attempt to create or acquire such ventures, since they can be used to boost a company's overall income and to support less profitable endeavors.

Q4/2015 - Revenues from z Systems mainframe server products increased 16 percent compared with the year-ago period (up 21 percent adjusting for currency). Total delivery of z Systems computing power, as measured in MIPS (millions of instructions per second), increased 28 percent.

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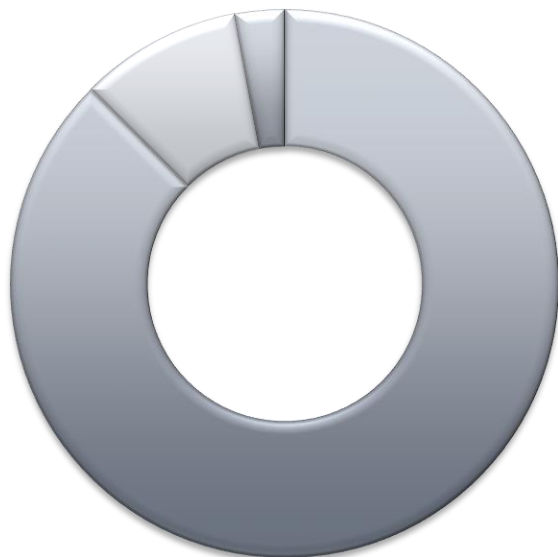
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[More about Q4/2016](#)

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Accounting for the \$120,000,000,000.00 spent during the last 5 Fiscal Years!

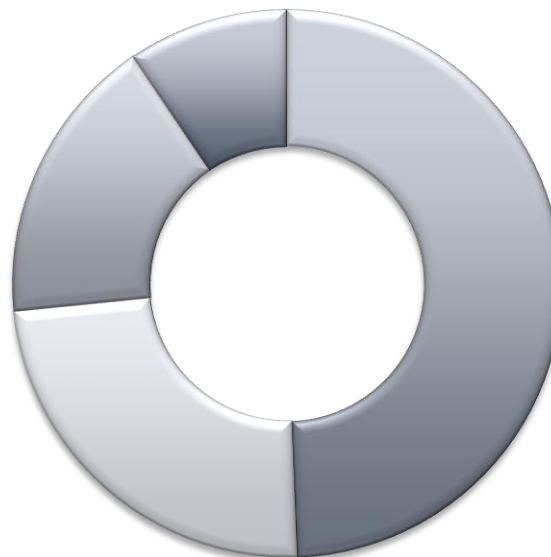
Where it came from:



Sources of Funds:

- 87.5% - Operations
- 9.6% - Borrowing
- 2.9% - Cash Delta

What it was used for:



Strategic Actions:

- 50% - BuyBack
- 24% - R&D
- 17% - Dividend
- 9% - Acquisition

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IBM Dividend Yield (TTM): **4.09%** for Jan. 28, 2016

View 4,000+ financial data types

Add

Browse...

IBM Dividend Yield (TTM) Chart

[View Full Chart](#)

1d 5d 1m 3m 6m YTD 1y 5y 10y Max

Export Data

Save Image

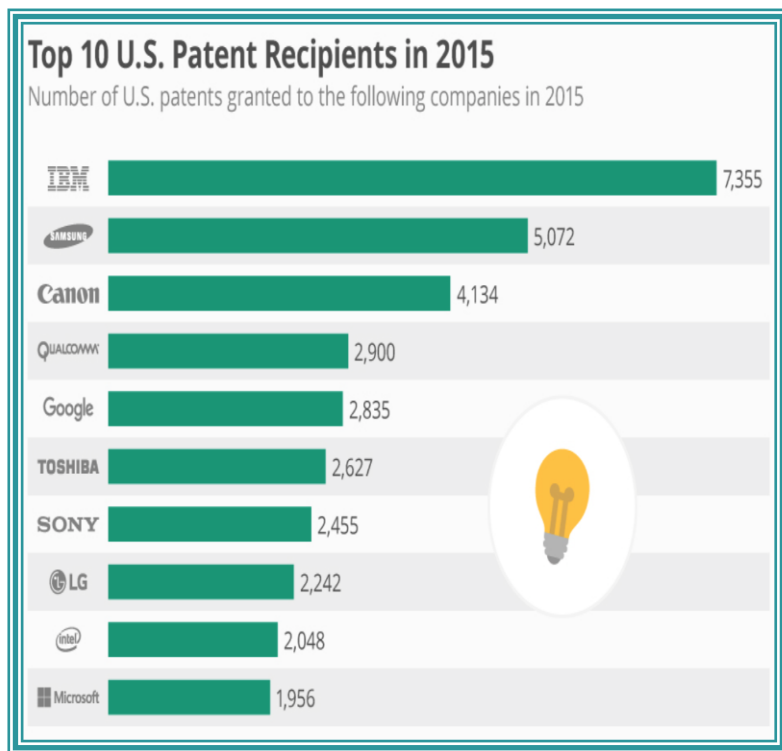


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[More About YCharts](#)

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Once Again IBM is Number One:

In 23 years IBM has amassed 88,000 patents.

In 2015 IBM was awarded the most U.S. patents out of any other company during a calendar year.

It'd almost be bigger news if IBM didn't receive the most patents in 2015, as the tech conglomerate has received the most patents for 23 years in a row.

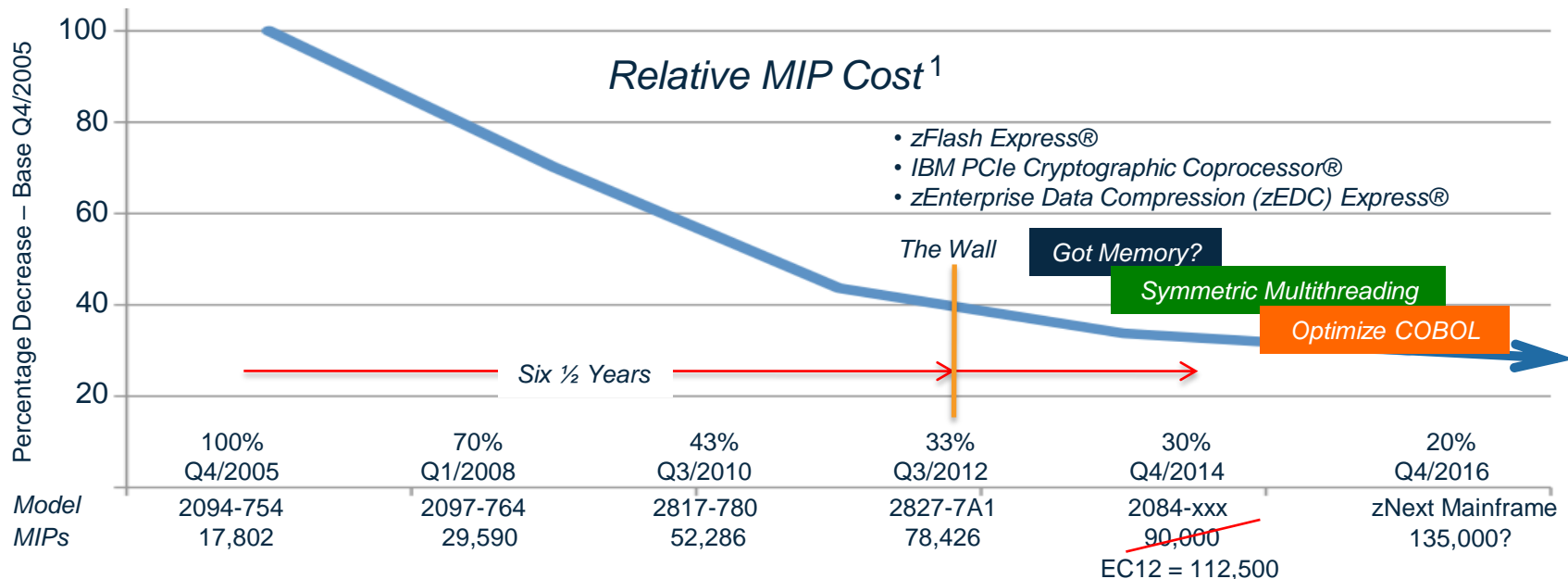
More than 2,000 of IBM's 7,355 patents in 2015 came from cloud computing and artificial intelligence.

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[Patent Claims in 2015 - Statista](#)

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¹ Source: <http://www.tech-news.com/publib/pl2084.html> | pl2094 | pl2097 | pl2817 | pl2827

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It's here! The IBM LinuxONE Rockhopper™

Meet the entry-level Linux server with unprecedented performance, security and resiliency.

Get the full story and more

IBM LinuxONE™ is a Linux and open source superhero made for the app economy.

Combining the best of enterprise Linux and open source, LinuxONE is the most efficient, powerful, secure Linux platform.



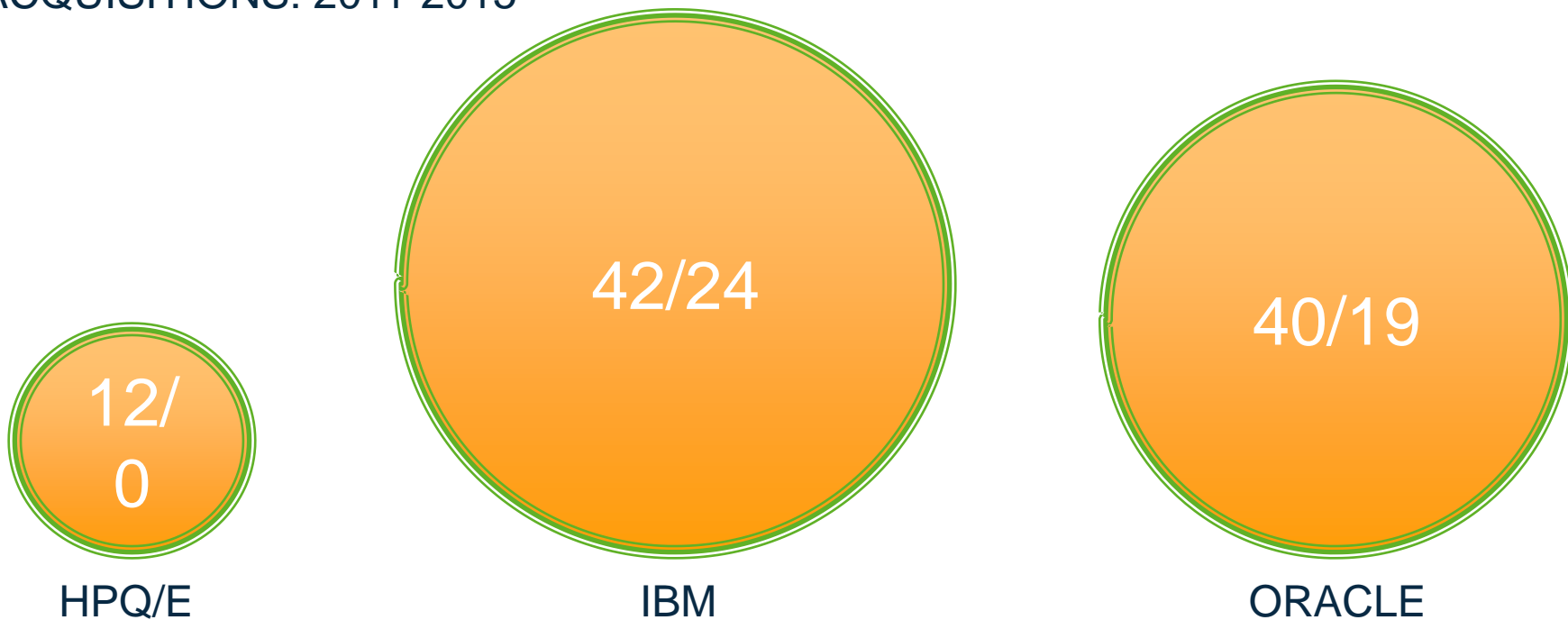
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[More about LinuxONE](#)

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ACQUISITIONS: 2011-2015



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Total/Cloud

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ACQUISITIONS: By IBM in 2015

Clearleap - 12/15 - Private - Not Disclosed

*Advance **Cloud** Video Services*

Gravitant - 11/15 - Private - Not Disclosed

*Hybrid **Cloud** and Enterprise Services*

Merger Health - 10/15 - Public - \$1.0 Billion

Medical image handling and processing

Cleversafe - 10/15 - Private - Not Disclosed

*Object Storage in the Hybrid **Cloud***

StrongLoop - 9/15 - Private - Not Disclosed

*Extends Enterprise Reach using IBM **Cloud***

Meteorix - 9/15 - Private - Not Disclosed

Analytics to Accelerate Workforce Transformations

Compose - 7/15 - Private - Not Disclosed

*MongoDB, Redis, Elasticsearch, PostgreSQL, **Cloud***

BlueBox - 6/15 - Private - Not Disclosed

*Tools that Accelerate Open Hybrid **Clouds***

Phytel - 10/15

Help Healthcare Providers Deliver Higher Value Care

Explorys - 4/15

Accelerate Cognitive Insights for Health/Wellness

Alchemy - 3/15

Enhancing Watson's Deep Learning Capabilities

Lighthouse - 8/14

***Cloud** Security Services*

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About Best in KLAS

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Moore's Law is Dead, Right?

Two wolves to feed, one good one bad!

"...halving of the dimensions and doubling of speed of chips every 18 months--will run out of steam very soon - for certain in 10 years?"

"Only a very few high-end chip makers today can even afford the exorbitant cost of next-generation research and design, much less the fabrication facilities needed to build them."

June 2015 IBM passes/sell control of chip fabrication to partner GlobalFoundries but vows to continue R&D investment Research and Development.

July 2015 IBM announces 50% scaling improvement!

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[About Why Tiny Chips Matter](#)

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RECENT DIVESTURES:

Customer Care Unit - September 11, 2013 - Synnex Corp. - \$.5 Billion

The customer service unit had a gross profit margin of about 20 percent compared with margins of about 60 percent for newer businesses like analytics and cloud computing.

Retail Store Solutions - April 17, 2013 - Toshiba TEC Corporation - \$.85 Billion

IBM's Smarter Commerce solutions and services extend corporate data center to the local retail store, Toshiba TEC's customer-facing retail solutions meet the growing demand of multi-channel commerce.

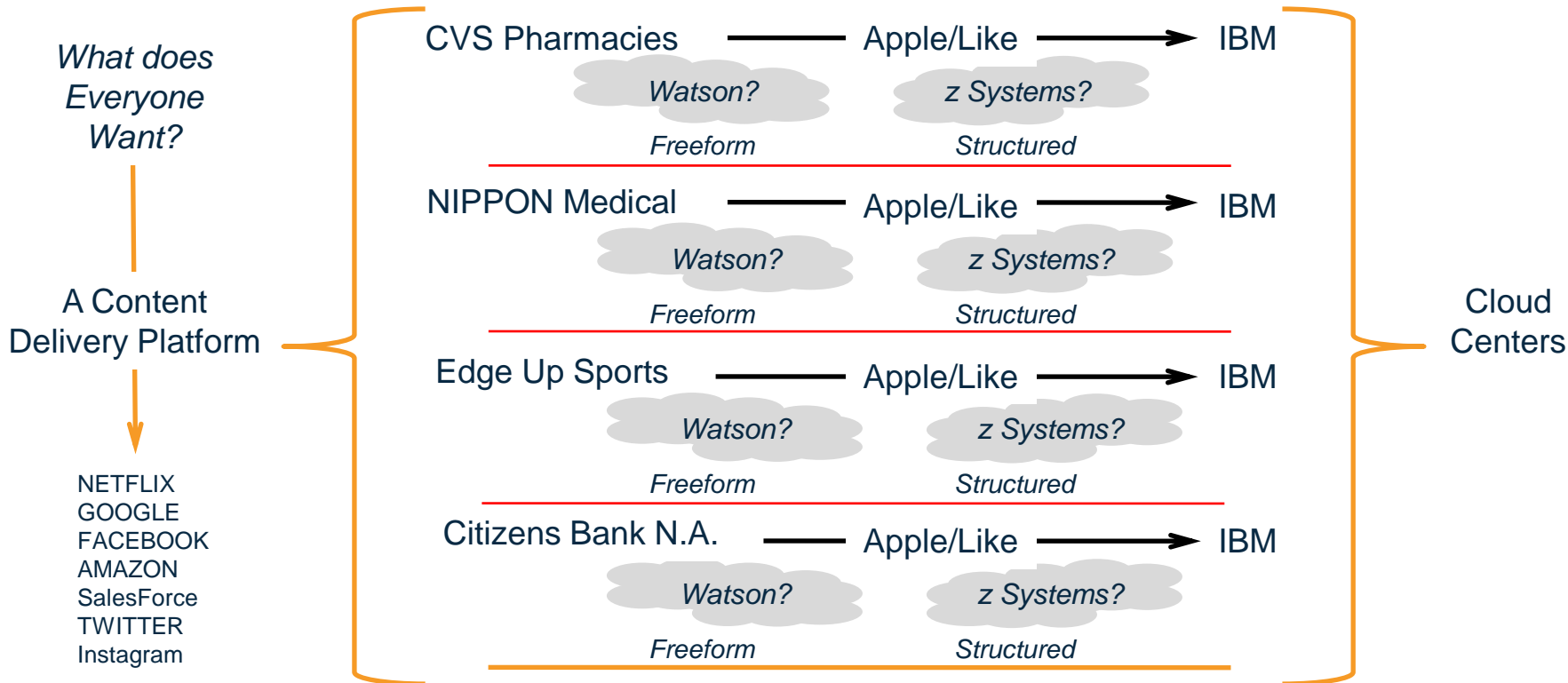
X86 Server Division - September 29, 2014 - Lenovo Group Ltd - \$2.1 Billion

The purchase is their latest since overtaking HP as the world's top PC maker. With in they can now leverage IBM technology in large/medium systems to compete with brands like HP and Dell.

Semi-Conductor Chip Manufacturing Division - October, 2014/June, 2015 - **\$1.5 Billion**

July 9, 2015 IBM announced 7nm transistors - such scaling could result in a 50% power-to-performance improvement in next generation mainframe and systems that power big data, cloud and mobile computing.

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Moving from “Think” to “Outthink” - The Cognitive Age



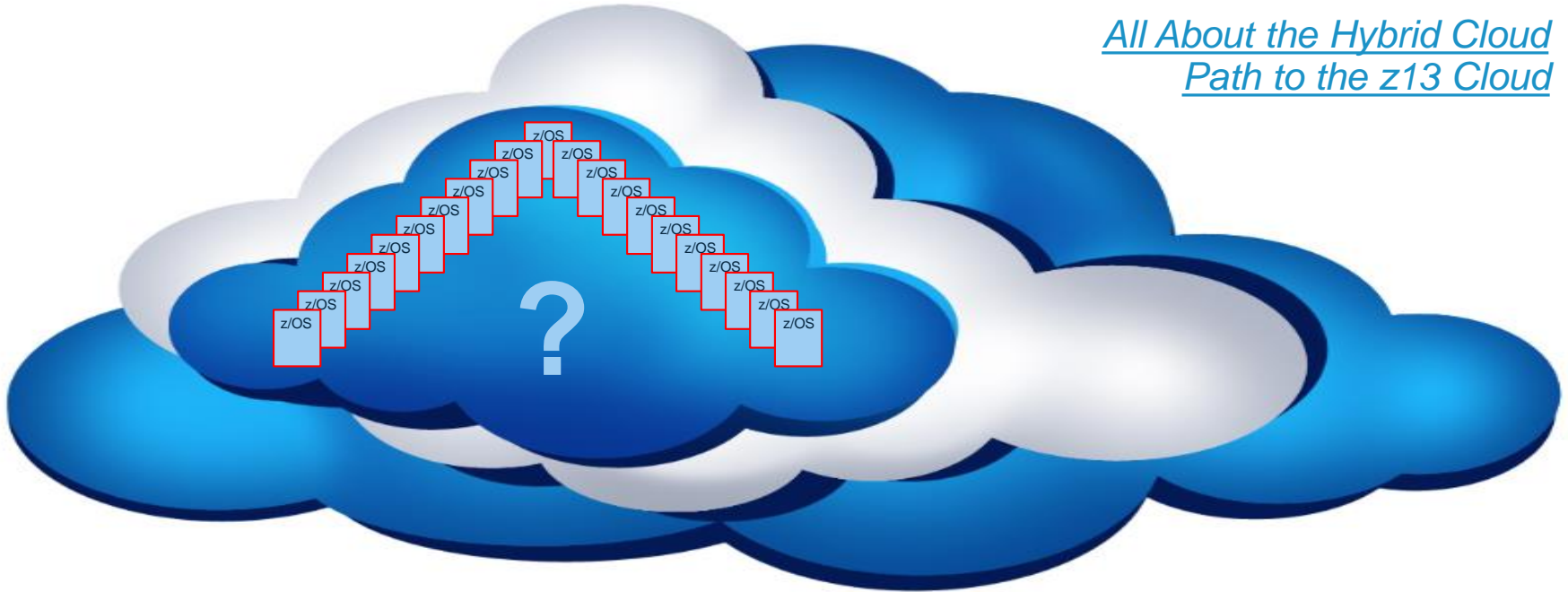
← Engagements ————— Platform ←———— Systems of Record —→

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All About the Hybrid Cloud
Path to the z13 Cloud



Something Old is New Again. Believe!

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The Mother of Mainframe Tuning:

The Dark Art of Performance Management!

Consultant, Teacher and author of the “Cheryl Watson’s Tuning Letter”. Since 1965 Cheryl has made the dark arts associated with tuning the performance of the Mainframe accessible to all of those with enough basic understanding to have only been dangerous before!

IBM says:

“The z/OS Management Facility is intended to enable system programmers to more easily manage and administer a mainframe system by simplifying day to day operations and administration of a z/OS system.”

Cheryl Watson says:

“z/OSMF IS the future for z/OS administration!”

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[More about Cheryl!](#)

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The Mainframe Operating System:

A Popular and Frequent Speaker!

He started with IBM as a computer operator in 1969. Worked on mainframe system software for 43 years before retiring as a Distinguished Engineer.

He worked on mainframe OS development for his entire career contributing to the transitions to XA-370 and ESA/370. More recently, he implemented the support for single z/OS images with more than 16 CPUs.

He was lead designer of the z/OS support for the zAAP and zIIP specialty engines.

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[More about Bob](#)

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The Father of Mainframe Security:

The Dawn of the z System!

It was 1974. The year that American racing driver Dale Earnhardt Jr, French rally driver Sebastien Loeb and British super model Kate Moss were all born but some of the “grown-ups” had other things on their minds...

A group of IBM mainframe specialists gathered together to do one of the things they do best – think up new problems! It was time for Barry Schrager and his SHARE Team to report back on their research into this new problem they'd been looking into called data security.

Whilst Barry Schrager and some of his peers had an enormous impact on the way that we Mainframe Users do business today, their stories are not well known.

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[More on birth of IT Security](#)

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Your very own Mainframe BFF:

Don't Migrate to a new Release without Her!

Marna Walle is a Senior Technical Staff Member in the z/OS Build and Installation organization in the IBM Systems and Technology Group in Poughkeepsie, New York.

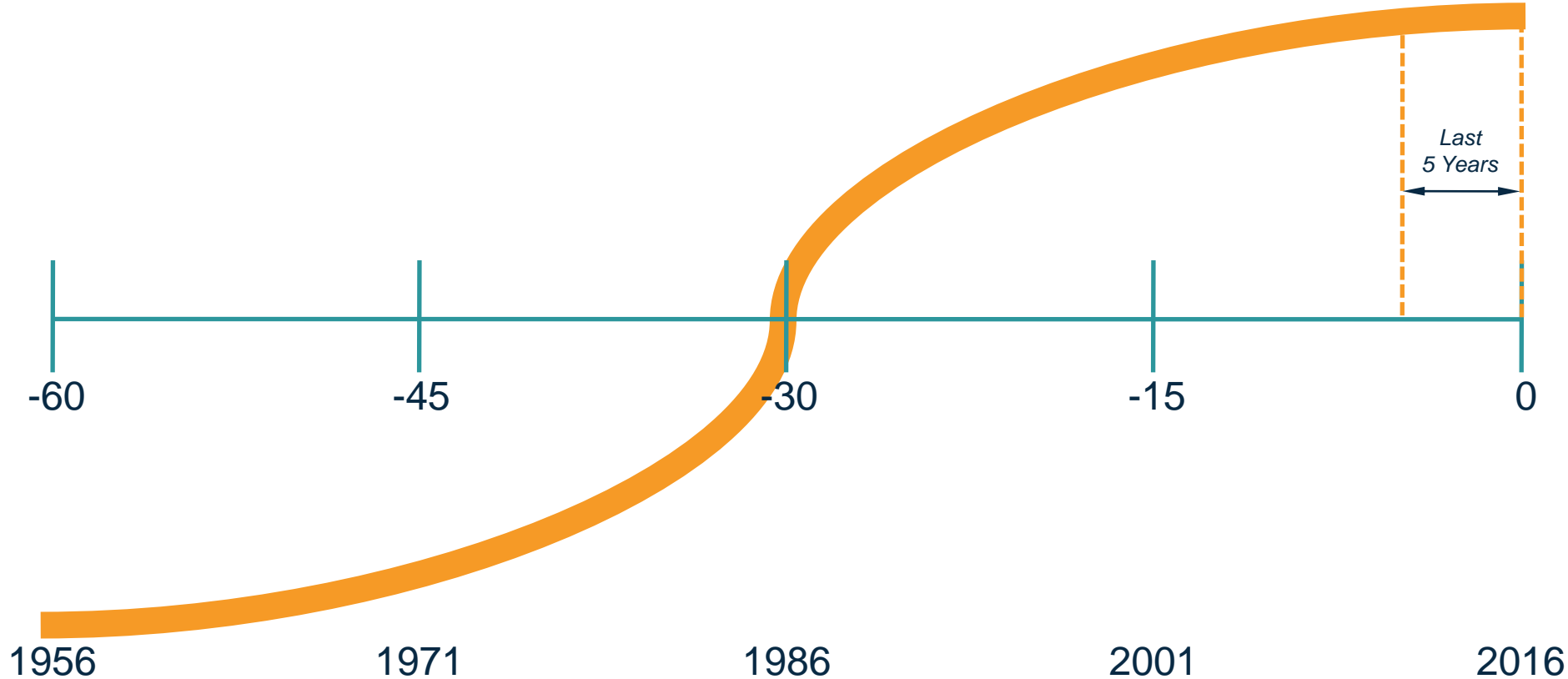
Her current responsibilities include z/OS release migration and installation improvements. Marna is a frequent speaker at customer conferences.

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[More on Migrating to V2/R1/R2](#)

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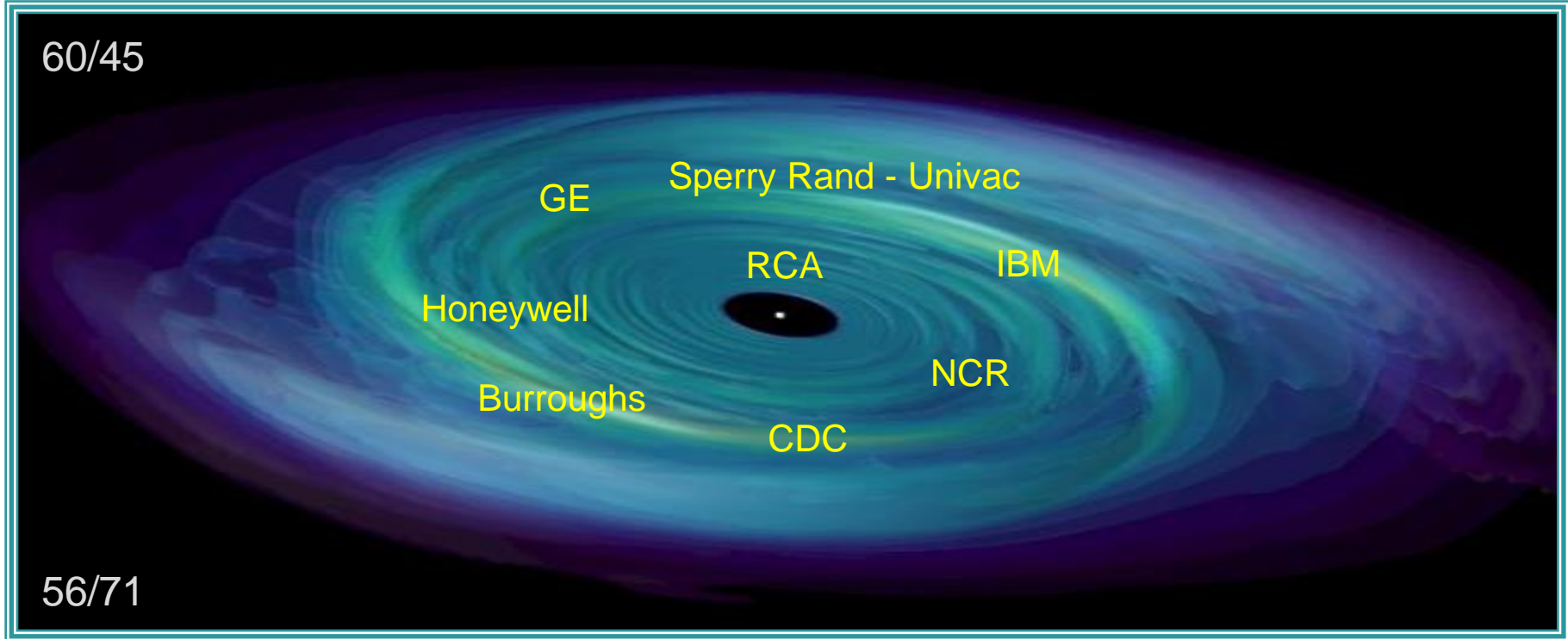


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[Mainframe Photo Album](#)

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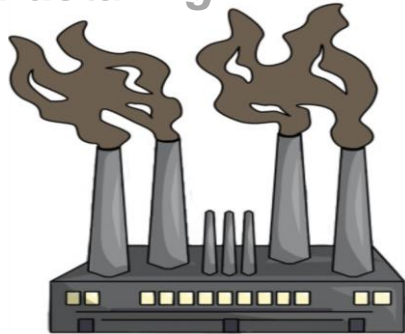
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Healthcare

Manufacturing



Transportation



Retail



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In the 1960's, Thomas J. Watson, Jr. is CEO.

In the most important product announcement in company history, IBM introduces the IBM System/360: a new concept in computers which creates a "family" of small to large computers, incorporating IBM Solid Logic Technology (SLT) microelectronics and using the same programming instructions. This "family" of computers transforms the industry. (A \$5 Billion investment, \$40 Billion in today's \$.)

IBM's dominant market share in the mid-1960s led to antitrust inquiries by the U.S. Department of Justice, which filed a complaint for the case U.S. v. IBM in January 17, 1969.

The suit alleged that IBM monopolized or attempted to monopolize the general purpose electronic digital computer system market, specifically computers designed primarily for business.

The case dragged out for 13 years, turning into a resource-sapping war of attrition.

In 1982, the Justice Department finally concluded that the case was “without merit” and dropped it, but having to operate under the pall of antitrust litigation significantly impacted IBM's business decisions and operations during all of the 1970s.

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Gene Amdahl

Entrepreneur

Gene Myron Amdahl was an American computer architect and high-tech entrepreneur, chiefly known for his work on mainframe computers at IBM and later his own companies, especially Amdahl Corporation. [Wikipedia](#)

Born: November 16, 1922, [Flandreau, SD](#)

Died: November 10, 2015, [Palo Alto, CA](#)

Fields: [Computer Science](#)

Organizations founded: [Amdahl Corporation](#), [Trilogy Systems](#)

Education: [University of Wisconsin-Madison](#), [South Dakota State University](#)

Awards: [Eckert–Mauchly Award](#)

Big Blue's Chief Architect:

The Dawn of the z System!

“After joining IBM in the early 1960s, Amdahl designed a collection of mainframes called the IBM System/360 series, which became the keystone for the dawning computer industry.

The sweet spot of the 360 series was that it enabled a grouping of different machines to process data at various levels of power and speed, all orchestrated by a common computing language (OS). Today the impact of that development lives on (in z Systems).”

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San Jose Mercury - 11/15/2015

z Systems - Beyond the Bumps!

J.C.R. Licklider & John McCarthy - “In the Sixties”



...had the idea that everyone on the globe should be interconnected and accessing programs and data at any site, from anywhere...

...had the idea of computation being delivered as a public utility, similar to the service bureaus...

Though conceived and developing, “Cloud Computing” had to wait 40 yrs for:

- *Virtualization Technology*
- *Universal High Speed Networks*
- *Software Interoperability*
- *Killer Applications - Perhaps Artificial Intelligence (AI)*

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60/45

Critical Success Factors:

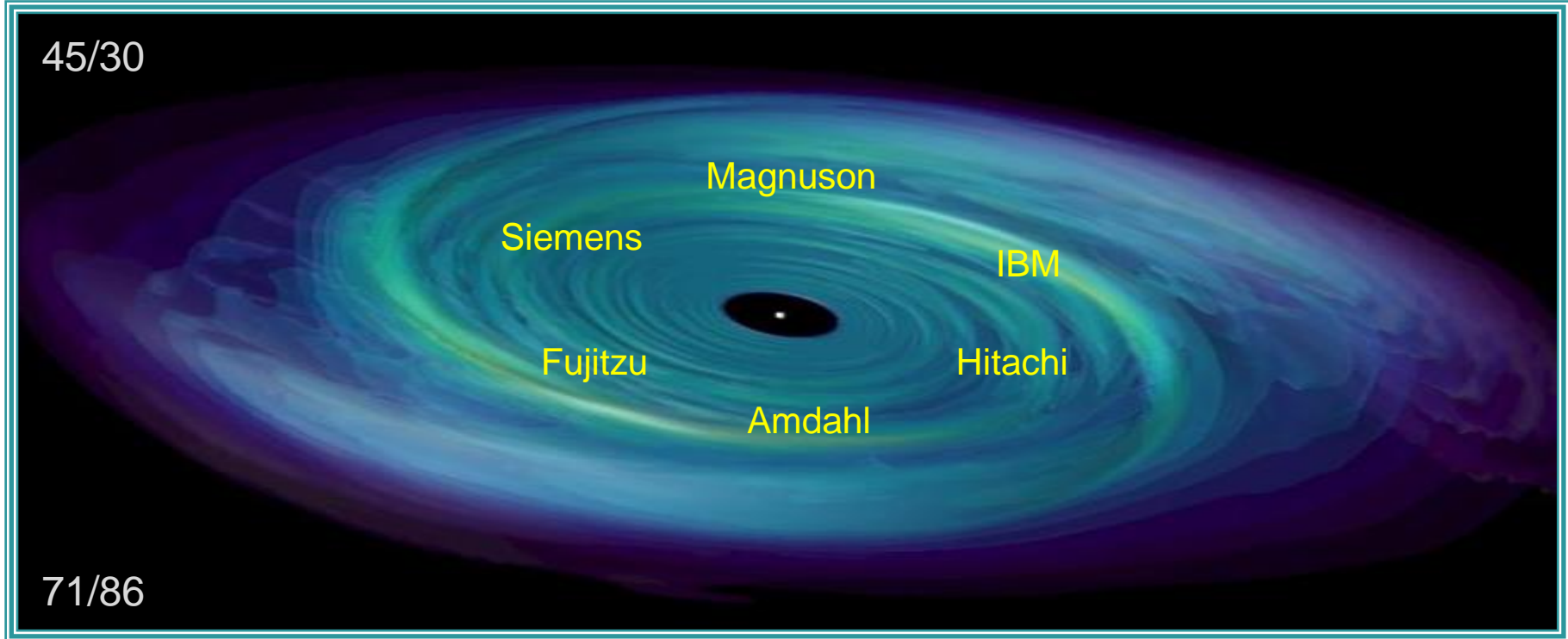
- ☐ *Total Cost of Ownership*
- ☐ *System Performance*
- ☐ *Compatibility*

56/71

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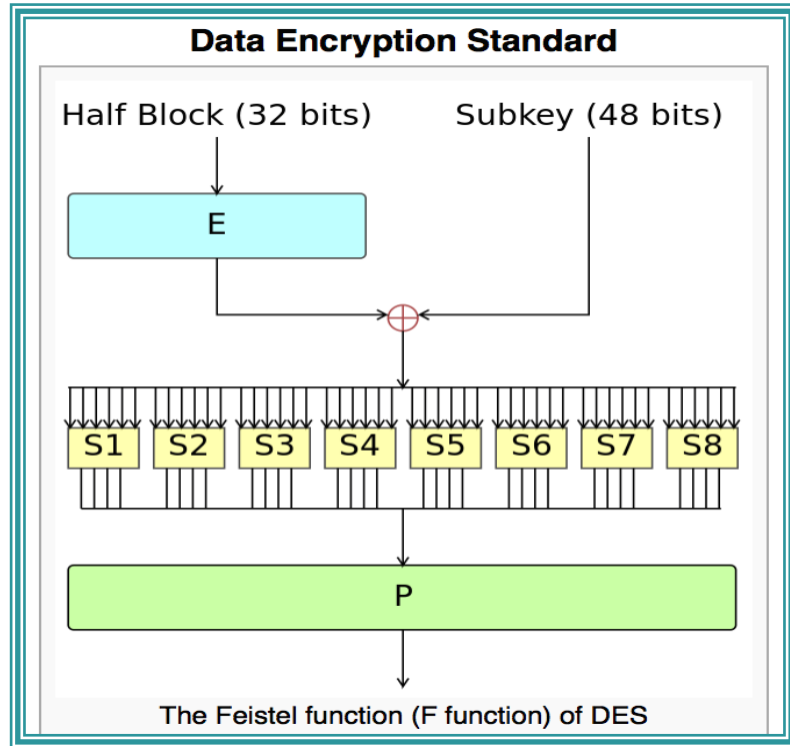
In 1973, IBM hired Frank T. Cary as its new CEO.

During Cary's tenure as CEO, the company continued to dominate in hardware. The IBM System/370 was introduced in 1970 as IBM's new mainframe. The S/370 did not prove as technologically revolutionary as its predecessor, the System/360. But from a revenue perspective, it more than sustained the cash cow status of the 360.

A less successful effort to replicate the 360 mainframe revolution was the Future Systems project. Between 1971 and 1975, IBM investigated the feasibility of a new revolutionary line of products designed to make obsolete all existing products in order to re-establish its technical supremacy. This effort was terminated by IBM's top management in 1975. But by then it had consumed most of the high-level technical planning and design resources, thus jeopardizing progress of the existing product lines (although some elements of FS were later incorporated into actual products).

Other IBM innovations during the early 1970s included the IBM 3340 disk unit, an advanced storage technology which more than doubled the information density on disk surfaces. Winchester technology was adopted by the industry and used for the next two decades.

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The Birth of Data Encryption Standards!

Promoted/Funded expansion of ARPANET!

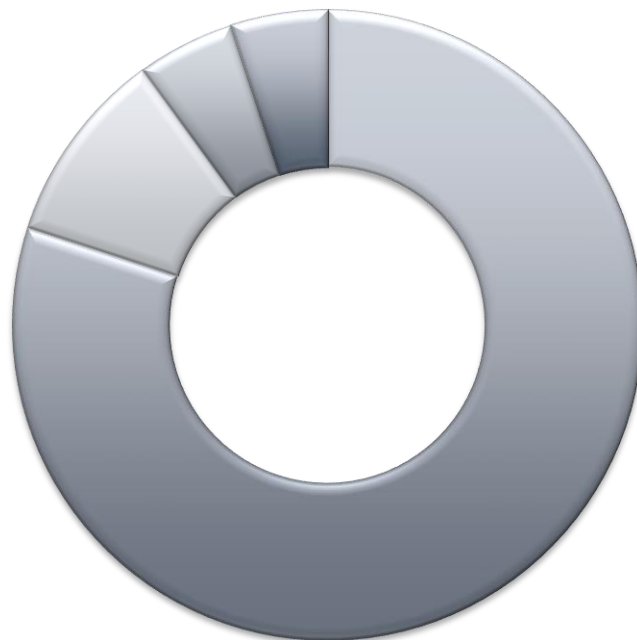
In 1972, after concluding a study on the US government's computer security needs, the US standards body NBS (National Bureau of Standards)—now named NIST (National Institute of Standards and Technology)—identified a need for a government-wide standard for encrypting unclassified, sensitive information.

NSA worked closely with IBM to strengthen the algorithm against all except brute force attacks and to strengthen substitution tables, called S-boxes.

Conversely, NSA tried to convince IBM to reduce the length of the key from 64 to 48 bits. Ultimately they compromised on a 56-bit key. DES is born!

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The Value of Market Leadership!



- Leader - 80%
- NUM2 - 10%
- NUM3 - 5%
- NUM4 - 5%

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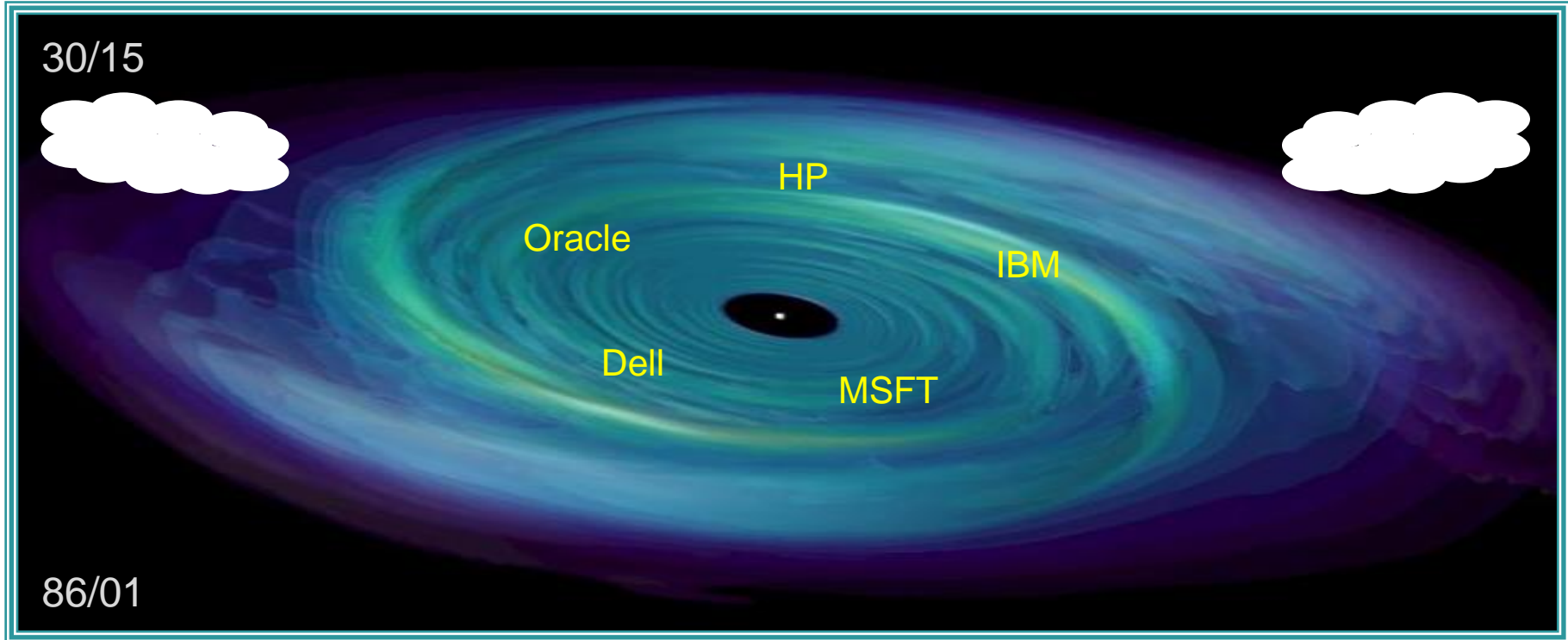
The only thing that can stop IBM is its customers' ability to understand and exploit its technology!

*Buck Rogers, IBM VP Marketing
1984 - Executive Briefing
OMNI Hotel, Miami FI
More or Less*

← When things are this good! →

Organizations often suffer from a failure of Imagination!

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In April 1993, IBM hired Louis V. Gerstner, Jr. as its new CEO.

For the first time since 1914 IBM had recruited a leader from outside its ranks. Gerstner had been chairman and CEO of RJR Nabisco for four years, and had previously spent 11 years as a top executive at American Express. Gerstner brought with him a customer-oriented sensibility and the strategic-thinking expertise that he had honed through years as a management consultant at McKinsey & Co. Recognizing that his first priority was to stabilize the company, he adopted a triage mindset and took quick, dramatic action.

His early decisions included recommitting to the mainframe, selling the Federal Systems Division to Loral in order to replenish the company's cash coffers, continuing to shrink the workforce (reaching a low of 220,000 employees in 1994), and driving significant cost reductions within the company.

Most importantly, Gerstner decided to reverse the move to spin off IBM business units into separate companies. He recognized that one of IBM's enduring strengths was its ability to provide integrated solutions for customers – a company that could represent more than piece parts or components. Splitting the company would have destroyed that unique IBM advantage.

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The Father of the Internet?

Promoted/Funded expansion of ARPANET!

As far back as the 1970s Congressman Gore promoted the idea of high-speed telecommunications as an engine for both economic growth and the improvement of our educational system.

He was the first elected official to grasp the potential of computer communications to have a broader impact than just improving the conduct of science and scholarship.

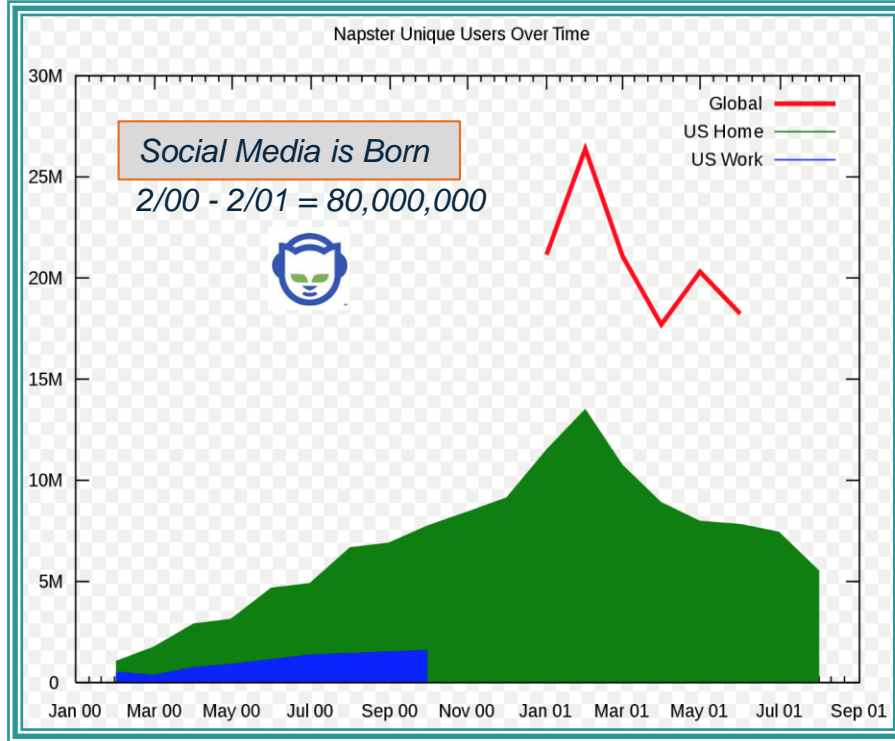
As a result of his efforts the Internet, as we know it today, became a reality in early 1993.

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[More about Al Gore](#)

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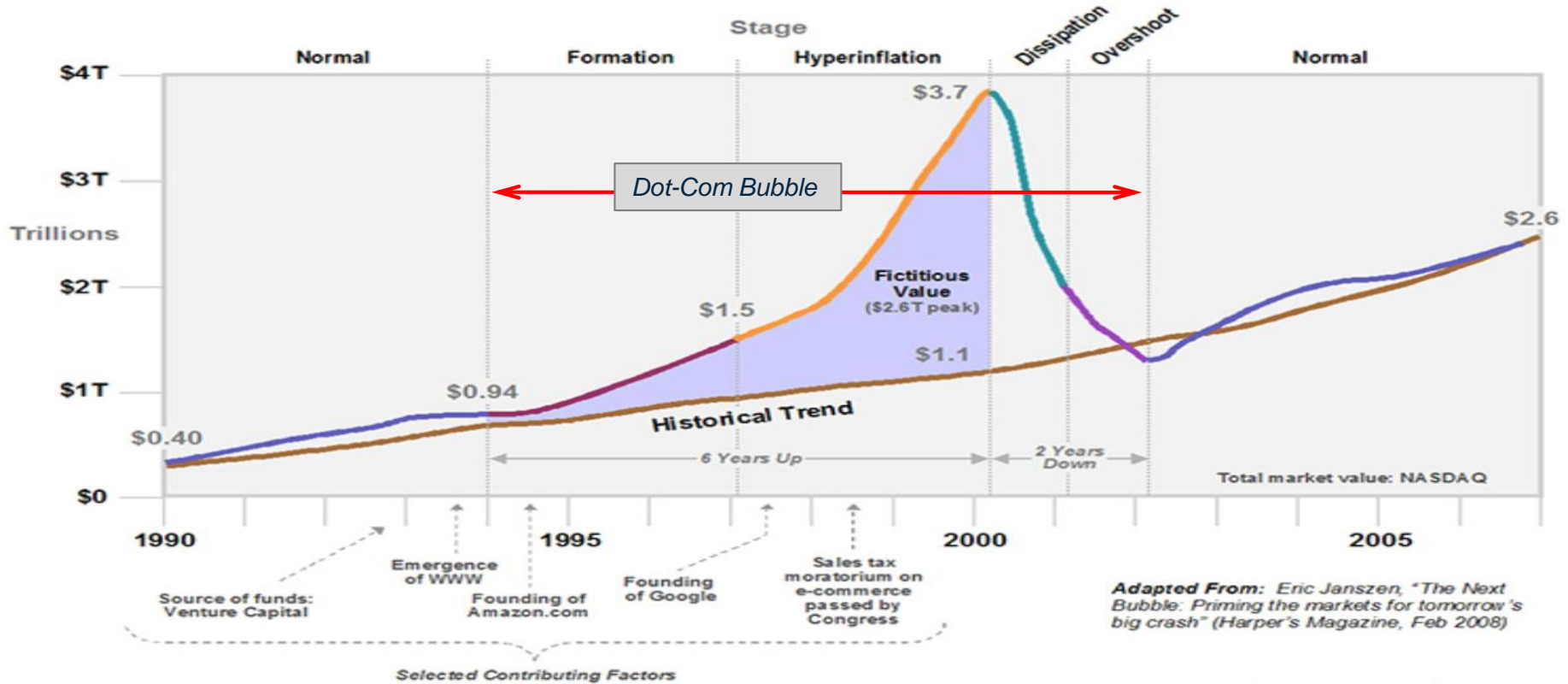
In 2000, America Online (AOL), which was then known mostly as online access provider, bought "old media" firm Time Warner for \$164 billion. Within 18 months, the company had reported a \$99 billion loss and attempted to reconstitute into its original components. The combined value of the company dwindled from \$226 to \$20 billion.

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Events Around the turn of the Century!

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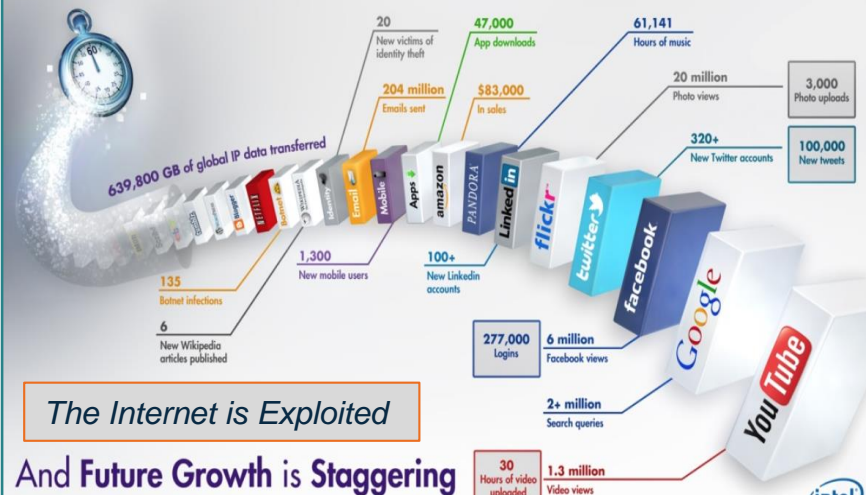
[More About Kampas Research](#)

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Social Connectedness Exploded!



What Happens in an Internet Minute?



The Internet is Exploited

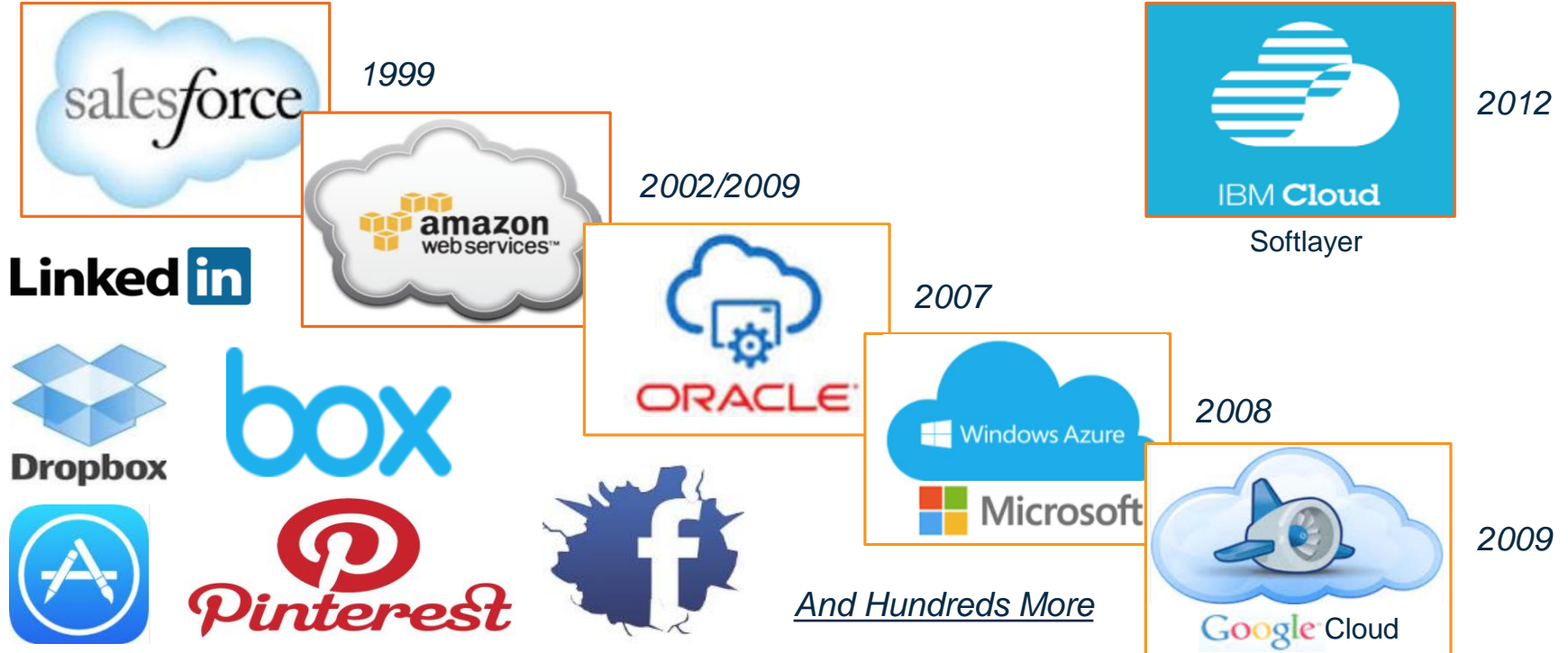
And Future Growth is Staggering



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In October 2011, IBM appoints Ginni Rometty as its new CEO.



Virginia M. Rometty, President and CEO
Samuel J. Palmisano, Chairman of the Board

Key Drivers for 2015 EPS Road Map

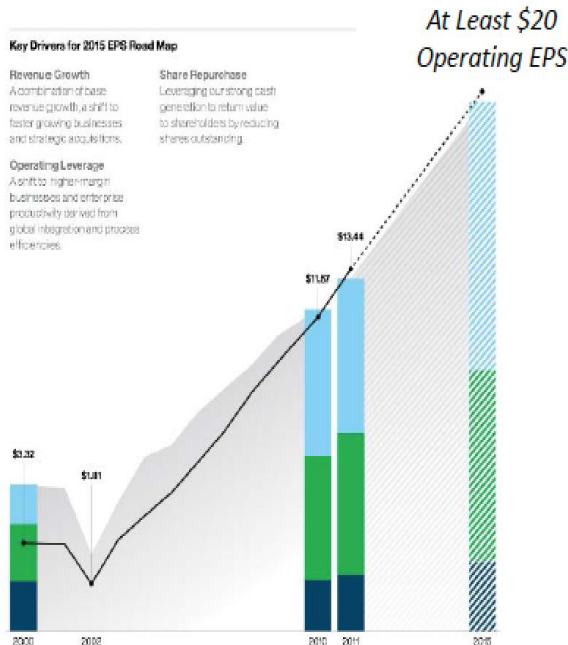
Revenue Growth

A combination of base revenue growth, a shift to faster growing businesses and strategic acquisitions.

Operating Leverage

A shift to higher margin businesses and enterprise productivity derived from global integration and process efficiencies.

Share Repurchase
Leveraging our strong cash generation to return value to shareholders by reducing shares outstanding.



Prior CEO, Sam Palmisano, steps down but retaining his position as chairman. Rometty's appointment marks the first time a woman has been CEO of IBM.

September 26, 2012, IBM announced that Rometty was taking on the added role of chairman and that Palmisano was retiring.

Actual 2015 EPS:

GAAP = \$13.60

Non-GAAP = \$14.92

October, 2014 revised projections.













Source: IBM 2011 Annual Report

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[More About Giving Up on EPS \\$20](#)

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	HP	Dell	Oracle	IBM
1	Down 10% in 2011 and 23% in most recent quarter. Lenovo a Threat? 	Still growing but pace has slowed. Large enterprise revenues up 5%. 	Hardware is shrinking, plan to give up on unprofitable businesses. Cloud is Nonsense! 	High-end leader, business very profitable. Growth is modest. Start Cloud Investments. 
2	Disclosure of apparent accounting fraud Latest (\$10B) humiliation of IT tech giant. 	PC eroding, enterprise division not enough to support company, use cash to acquire growth. 	Better-than-expected software sales help tech giant beat expectations. Cloud what! 	Risk to exceeding 2015 projections: global slowdown, delayed or cancelled projects. 
3	Board survives ouster attempt - 3.21.13 - Ray Lane out as Chairman - 4.5.13 - 	Once one bidder, now three . What appeared simple - now complex, enchanting, and flawed. 	Flat Q1 Earnings Continued decline in Hardware, No growth in Software. 	Solid start, good client demand - did not close software/mainframe deals in Second Quarter. 

¹ SHARE 08/12 - Financial Times – Friday, June 1, 2012 and (xx)Percentage Market Share – Q3 2011 - IDC

² SHARE 02/13 - SJMN 12/19/2012 and Business Insider 11/2012 and <http://seekingalpha.com/article/302020> & 821141

³ zSynopsis 05/13 - NASDAQ/NYSE - Business Wire - SJMN - <http://channelnomics.com> - <http://www.forbes.com/>

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	HP	Dell	Oracle	IBM
4	Splits in 2 by EOY/15. Q2/15 Nearly every business unit had declined in revenue. ↓	Private. Dell Cloud Marketplace, will do for buying cloud services what Priceline did. ↓	4 th Q/15 Earnings fall. 17% decline, core S/W. Acquired Datalogix for SaaS Cloud analytics. ↓	Abandons \$20 target. Invests heavily in areas of growth, despite near-term financial setback. ↓
5	HP Enterprise (HPE) now focused on business service, big data, mobile & public cloud computing.	Biggest tech deal of all time, Dell buy software, storage, security giant EMC for \$67 billion.	Following a change in strategy, now deploys cloud services in 19 centers in 14 countries.	IBM-Softlayer can now build out a datacenter to customer and get in up and running in a couple days.
6	HPE 2016 Revenue unsettled, EPS Estimate \$1.50-1.60/Sh with Free Cash Flow \$2.6 Billion.	Spinning off SecureWorks unit, a global provider of security solutions, in IPO announced - 12/15.	To keep pace with cloud growth, Oracle plans to construct a technology campus in Austin - 12/22.	Continues transformation through stock repurchase, divestitures, acquisitions and platform development.

4 <http://www.nytimes.com/2014/10/21/business/amid-a-shift-in-strategy-ibm-reports-weak-earnings.html>

5 SHARE Orlando 08/15 - San Jose Mercury News - Valley companies shift to internet cloud - Pete Carey - October 14, 2015.

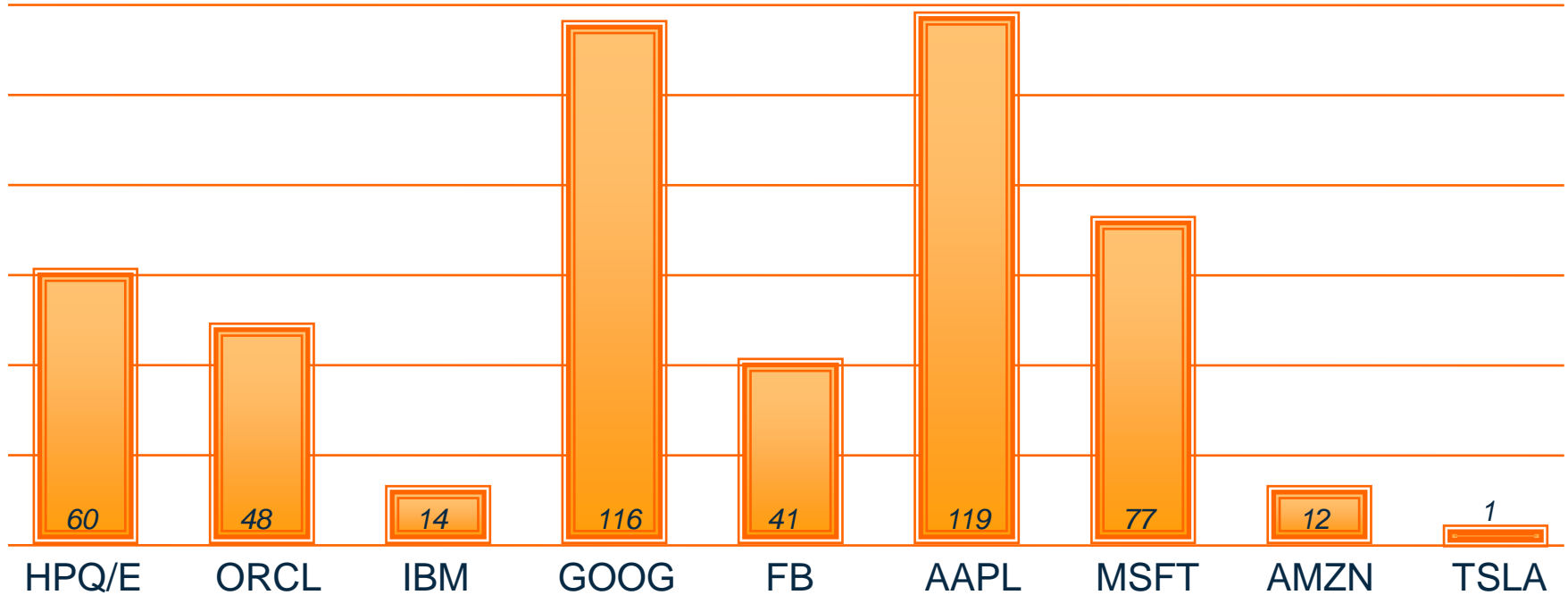
6 SHARE San Antonio - 02/16 - Arrived at from various public information sources.

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SHAREHOLDERS EQUITY - BILLIONS - LAST REPORTED



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Meet Moola:

The Mainframe Cash Cow - I'm Back!

Q3/2015 - Revenues from z Systems mainframe server products increased 15 percent compared with the year-ago period (up 20 percent adjusting for currency). Total delivery of z Systems computing power, as measured in MIPS (millions of instructions per second), increased 18 percent.

Q4/2015 - Revenues from z Systems mainframe server products increased 16 percent compared with the year-ago period (up 21 percent adjusting for currency). Total delivery of z Systems computing power, as measured in MIPS (millions of instructions per second), increased 28 percent.

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Failure Results in Disintermediation:

Disintermediation occurs when a user/buyer, having connected with the named provider/seller, becomes dissatisfied with the product/service offer by the provider/seller and decides to circumvent the provider/seller platform eventually transacting with a perceived better provider/seller of an alternative but similar product/service.

[More about Disintermediation](#)

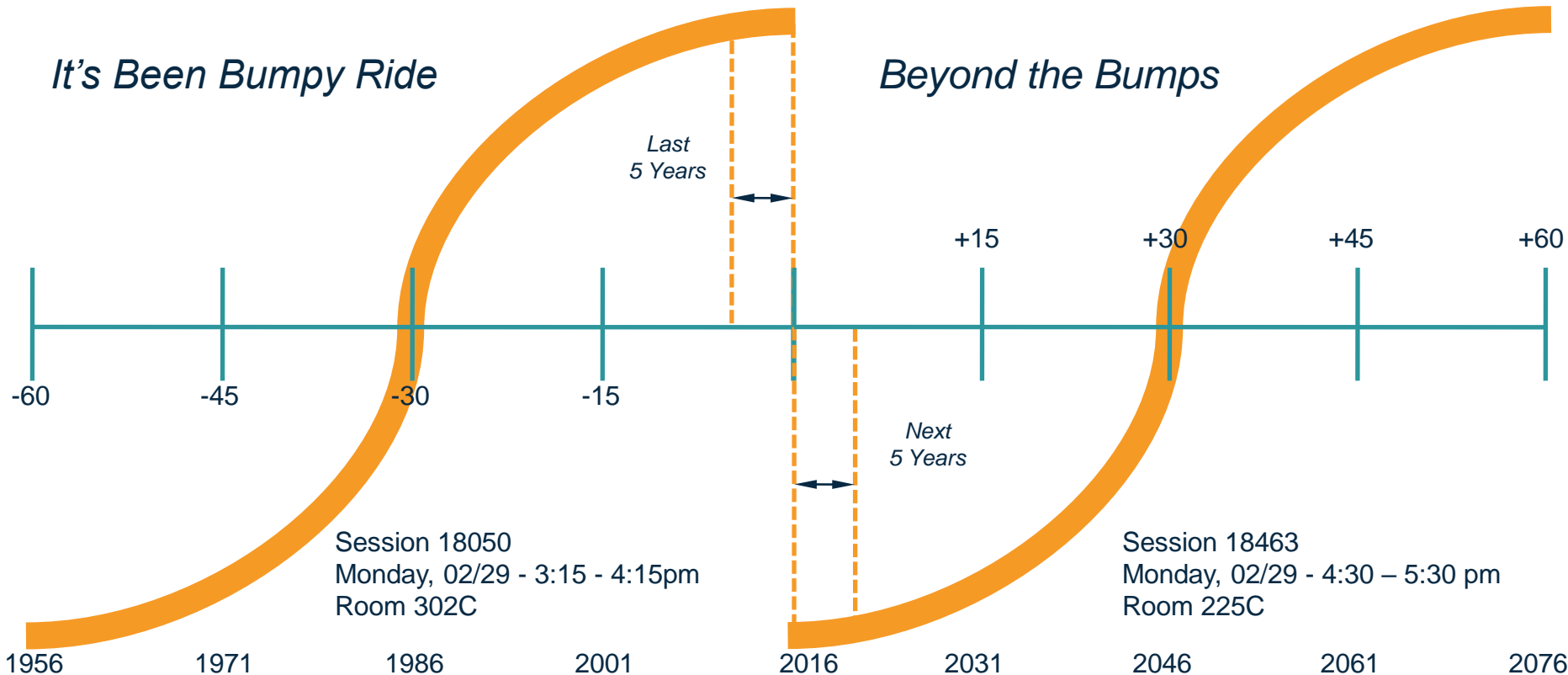
This should be considered the “Number One” Critical Success Factor in the emerging \$5.0 Trillion Internet of Everything Economy.

[What is The Internet of Things \(IoT\)?](#)

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It's Been Bumpy Ride

Beyond the Bumps



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[Mainframe Photo Album](#)

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Session 18050

Monday, February 29 - 3:15 - 4:15pm

Room 302C

Paul R. Robichaux, NewEra Software, Inc.



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