Getting a New Generation to a New Normal on the Mainframe

Reg Harbeck
Mainframe Analytics

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My Background

- B.Sc. in Computer Science
- 25 years in IT and mainframe
- Worked for private industry, then government, then CA
- In 2005 introduced Mainframe Continuity Planning as whitepaper and SHARE presentation
- Co-founded Mainframe Analytics in 2011
  - http://MainframeAnalytics.com
  - http://MainframeAnalytics.blogspot.com

Who Are You?

- Highly Experienced Mainframer (30+ years)
- Experienced Mainframer (15 – 29 years)
- Trusted Mainframer (5-14 years)
- New Mainframer (0 – 4 years)
- Non-mainframe IT professional
- Potential Mainframer
- Ex-Mainframer
- IT management
- Curious
- Mainframe skeptic
- Mainframe retiree

It Happened

- Your best mainframers began to retire
- You couldn't leave the mainframe
- You hired newbies, repurposed non-mainframers, and contracted retirees
- And everything turned out OK!
- Here's what you did right

Takeaways

1. Cherish Your Legacy
2. Build on What Works
3. Blaze a Trail

Cherishing Your Legacy

- Legacy: “it works”

1. **Cherish Your Legacy**
2. Build on What Works
3. Blaze a Trail

Cherishing Your Legacy

- Mainframe: the platform created by a culture

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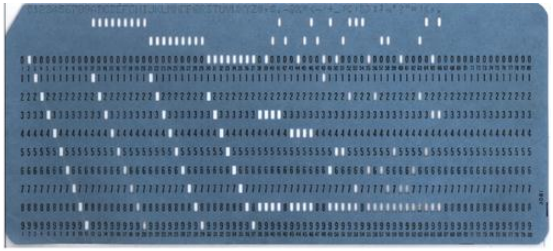
History

- Stonehenge
- Abacus
- Babbage’s difference engine
- Punch cards, electric tabulators, IBM



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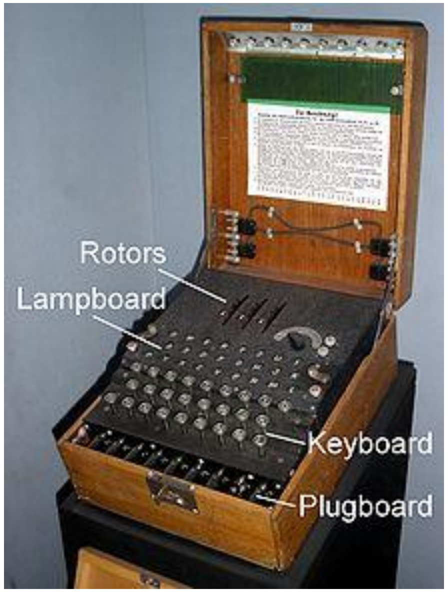
History

- World War II
  - Ballistics
  - Code making and breaking
  - Enigma machine
  - Alan Turing



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Early Computers

- Computer: The first job title to be automated
- Business, academic and military technologies
- IBM

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Early Computers

- IBM 701
- SHARE founded in 1955
- Assembler, PL/1, Fortran, COBOL
- Grace Hopper

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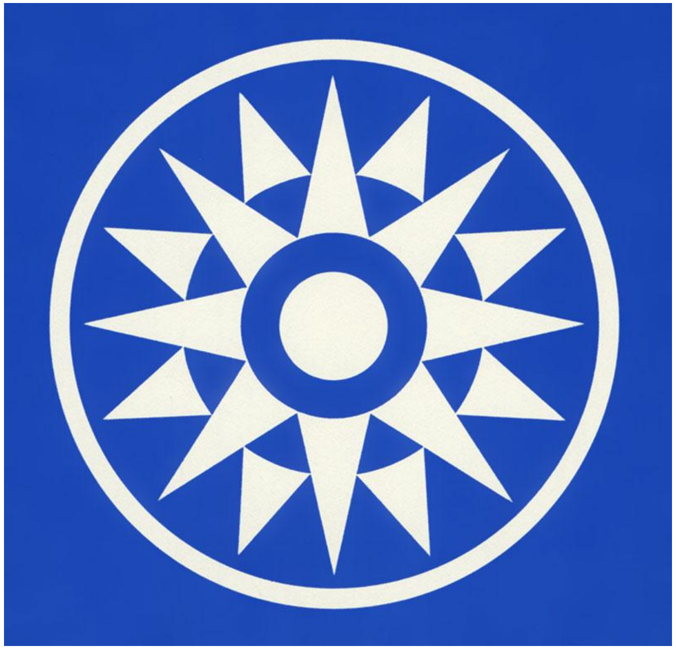
April 7, 1964: System/360

- After nine years’ gestation, IBM and SHARE had a love child



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Getting the Bugs Out

- OS/360, DOS
- Software as a product
- Databases
- Security
- CICS
- Statement of Integrity
- VM
- Backup and Recovery
- Automation
- Systems Management
- Practice, practice, practice

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Building the Culture

- Able, Baker, Charlie, Dog, Easy, Fox
- Military, Academia, Big Business
- Plan, test, allocate
- Life cycle management, change control
- Capacity planning, chargeback
- Backup and recovery
- 24 x 7 support, pagers, 2400 baud terminals

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Dinosaur?

- 1980’s: Departmental and petty cash computers
- Teenage mainframe suddenly a “dinosaur”
- Other platforms grew up from single-user OSes
  - Needed to be “lite”
- Unix: 1969 (44 years old)
- MS-DOS: 1981 (32 years old)
- Macintosh: 1984 (29 years old)
- Windows: 1985 (28 years old)
- Linux: 1991 (22 years old)

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Dark Night of the Sole

- Mainframe lost its sizzle, but more was at stake
- Non-mainframe platforms tried to take on more
  - Generally, just got simple or new workloads
  - Often back-ended by mainframe
- Mainframe careers lost glamour
- Few new mainframers
- The mainframe kept running

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Y2K

- Fixed – too well?
- Billions of lines of code that now truly work

WEEKLY WORLD NEWS

THE COMPUTER CRASH OF THE MILLENNIUM!

JANUARY 1, 2000

THE DAY THE EARTH WILL STAND STILL!

ALL BANKS WILL FAIL!

FOOD SUPPLIES WILL BE DEPLETED!

ELECTRICITY WILL BE CUT OFF!

THE STOCK MARKET WILL CRASH!

VEHICLES USING COMPUTER CHIPS WILL STOP DEAD!

TELEPHONES WILL CEASE TO FUNCTION!

DOMINO EFFECT WILL CAUSE A WORLDWIDE DEPRESSION!

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That Ain’t Just Data!

- It’s time to radically care about the mainframe
- Careers, businesses, the economy rely on this
  - Successfully!
- Ask yourself: “What in my life do I care deeply about and why?”
- Caring leads to sharing: let other people know about the platform you trust!
  - Decision makers and influencers
  - Non-IT acquaintances at coffee or cocktails or golf
  - Place of worship, Toastmasters, Rotary, Mensa…
  - Seriously! This really matters!

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What Works?

- Something old
  - Tried and proven
  - Hardware
  - Operating Systems
  - Systems management software
  - Databases, languages
  - Applications
  - Scrupulous practices, culture

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What Works?

- Something new
  - Latest technologies
  - zEnterprise
  - Software innovations
  - Ease of installation

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What Works?

- Something borrowed
  - The best of other platforms!
  - TCP/IP
  - Browser-based interfaces
  - Graphical management workspaces
  - Enterprise monitoring, automation, management

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What Works?

- Something Blue

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What Doesn't Work?

- Obsolete systems programs
  - Often in assembler
  - Rarely well-documented
  - Multiple layers of modifications
  - Original authors often long gone
  - Vendor software now often does the same thing, only better
    - And it's already running on your mainframe

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What Doesn’t Work?

- Out-of-date configurations
  - “Set and forget” gets stale after a few decades
  - Often new options use fewer resources
  - Replace those obsolete in-house programs
  - Your business needs have likely changed

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What Doesn’t Work?

- Overlapping vendor software
  - May no longer meet a business need
  - Possible duplication of functionality

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What Doesn’t Work?

- Obsolete attitudes
    - Mutual condescension between platforms
    - Reluctance to let new people learn by experience
    - Rigid responses to innovative ideas

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What Doesn’t Work?

- Bad apples
  - It’s easy to forget they’re mostly long gone
  - Other platforms still have lots
  - With a new cohort of mainframers, there’ll be more
  - If your security, auditing, change control, etc. aren’t tight, you’re in for unpleasant surprises
  - Watch out for loose ends like extraneous APF lib’s

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How to Build?

- Start with the people you already have
  - Value their knowledge and experience
  - Make sure they know you do
  - Encourage them to begin mentoring
  - Slowly hand over their responsibilities
    - They won’t run out of work
  - Look into some post-retirement contracting

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How to Build?

- Add new people
  - Repurposed non-mainframe IT staff
  - New kids
  - Experienced mainframers from other organizations
  - Disabused un-disillusioned ex-mainframers

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Build with Your New People

- Send them on courses (in-person and CBT)
- Have them map what they learned to your environment and report on it
- Send them on conferences
- Get them to sign up for zNextGen
- Encourage them to learn the culture
- Make sure they each have at least one mentor

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Build with Your New People

- Assign them projects to learn and document your environment
  - What in-house code is there?
  - What’s obscure?
  - What’s obsolete?
  - Who still understands it?

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Build with Your New People

- Have them learn and document your culture
  - Change control, DR, Capacity Planning, Security…
  - Why, how, who?
  - Encourage them to ask challenging questions and not give up until they have a satisfactory answer
  - Have them suggest alternative ways to get the same or better results

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Build with Your New People

- Get to know the capabilities of your vendor software
  - Start with the operating system
  - Then review other vendor software
  - How is it currently used and configured?
  - What new features exist?
  - How can it be run more optimally?
  - What in-house code can it supersede?
  - What new business needs can it respond to?

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Use a Taxonomy

- To understand your software, categorize it by “what” and “why”
- Don’t assume its original purpose or marketing message is the value it brings now
- Many solutions have multiple values
- One approach is the Mainframe Analytics Taxonomy
- See http://mainframeanalytics.blogspot.com for elaboration

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Mainframe Analytics Taxonomy: Behavior ("What") Dimension

1. Data Handling
2. Device Interfacing
3. Applications and Automation
4. Context Management
5. Optimization
6. Quality and Lifecycle
7. Production

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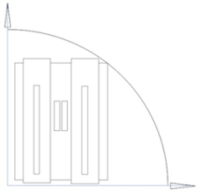
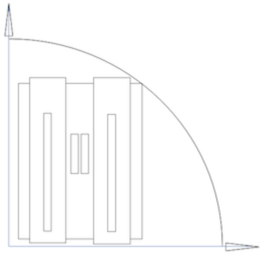


Mainframe Analytics Taxonomy: Business Need (“Why”) Dimension

A. Business Enablement
B. Continuity
C. Security, Integrity and Compliance
D. Cost-Effective Operations
E. Analysis and Planning
F. New Business Value



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Build with Your New People

- Assign them to present suggested improvements
  - First to peers and open-minded supporters
  - Then to experienced people and management
  - If they can project a real business benefit, give them a chance
    - Reduced CPU and other resource usage
    - Reduced software, hardware, etc. costs
    - Reduced maintenance effort
    - Sometimes, just learning can be enough of a benefit

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Implementing Suggestions

- Use the opportunity to get into good, scrupulous habits
  - Document, document, document
  - Plan, review, fine-tune
  - Test, test, test
  - Full change control, backout plan
  - Present on experience, retain lessons learned

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Keep Doing It

- A true mainframer is a professional
- Professionals keep learning all their lives
- There’s no limit to the number of ways to beneficially improve
- Get your new people in the habit of finding, suggesting and making improvements
- Recognize and reward successes
- Learn from failures and reward good presentations of lessons learned

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Let the Whole World Know!

- As the mainframe, which already works, keeps getting better, don’t hide it
- Write articles for in-house publications
- Give lunch’n’learn presentations about what you do and learn
- Let other parts of your organization know
- Present at conferences, write articles for industry publications
- Advance your career!

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What About the Experienced?

- Give ‘em some WIIFM
- Respect your mentors
- Give them credit in presentations and articles
- Encourage socializing across generations
- Take their sensibilities seriously
- When they retire, treat it like a graduation
- Find ways to include them after if they wish

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Blaze a Trail!

- You now have a whole stable full of mainframe evangelists
- They already know other platforms from their pre-mainframe days
- They've learned your mainframe environment and business needs
- They're the next wave in responsible computing – turn 'em loose!

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The Return of Responsibility

- Responsible computing doesn't require mainframes – but it helps
- Encourage cross-pollination of mainframe strengths and non-mainframe innovations
- Get your enthusiasts to suggest IT improvements that go beyond the mainframe
- Become known for being the platform and people of innovation

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Question Accepted Wisdom

- Hold forums for discussion of responsible computing
- Ask hard questions with no easy answers
- What’s sizzle, what’s steak, and what’s waste?
- Why does the mainframe do DR, Capacity Planning, Change Control, etc.?
- When can/should other platforms?
- If they can’t, what workloads should they forfeit?

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Ask For Work

- Mainframers are seen as resistant to new applications, initiatives
- We get approached and tell people they'll have to wait
- Instead, figure out how to go after new business and properly staff and implement it
- Market your strengths, then show them
- Don't wait to be asked

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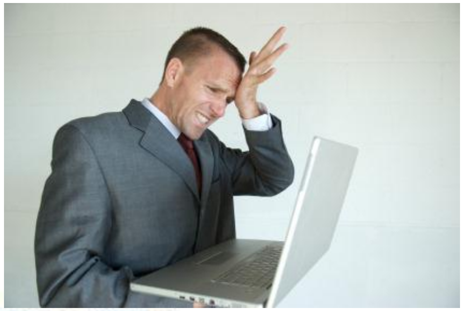
Coulda Done it on a Mainframe!

- When chatting about failed or insufficiently successful non-mainframe projects, pay attention
- If mainframe attitudes and technology could have prevented it, don't be shy
- "Shame they didn't do it the mainframe way"
- Mean it, and be prepared to defend it



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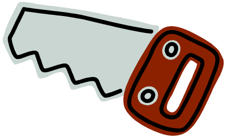
Sharpen Your Saw



- Never lose sight of advancing your mainframe environment
- Find a way to keep, maintain, and show your learnings
  - Consider a wiki
- Keep the doors open for new suggestions and innovations
- Don’t pooh-pooh non-mf’ers

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Celebrate!

- Never forget: it's all human!
- "It's just business" is B.S.
- "We're only human" is better
- Nothing succeeds like success – don't hide it!
- Nerds just wanna have fun!

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How You Won

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