Getting a New Generation to a New Normal on the Mainframe

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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”

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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

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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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Complete your sessions evaluation online at SHARE.org/SFEval
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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