The Mainframe – Myths, Mastery and Money

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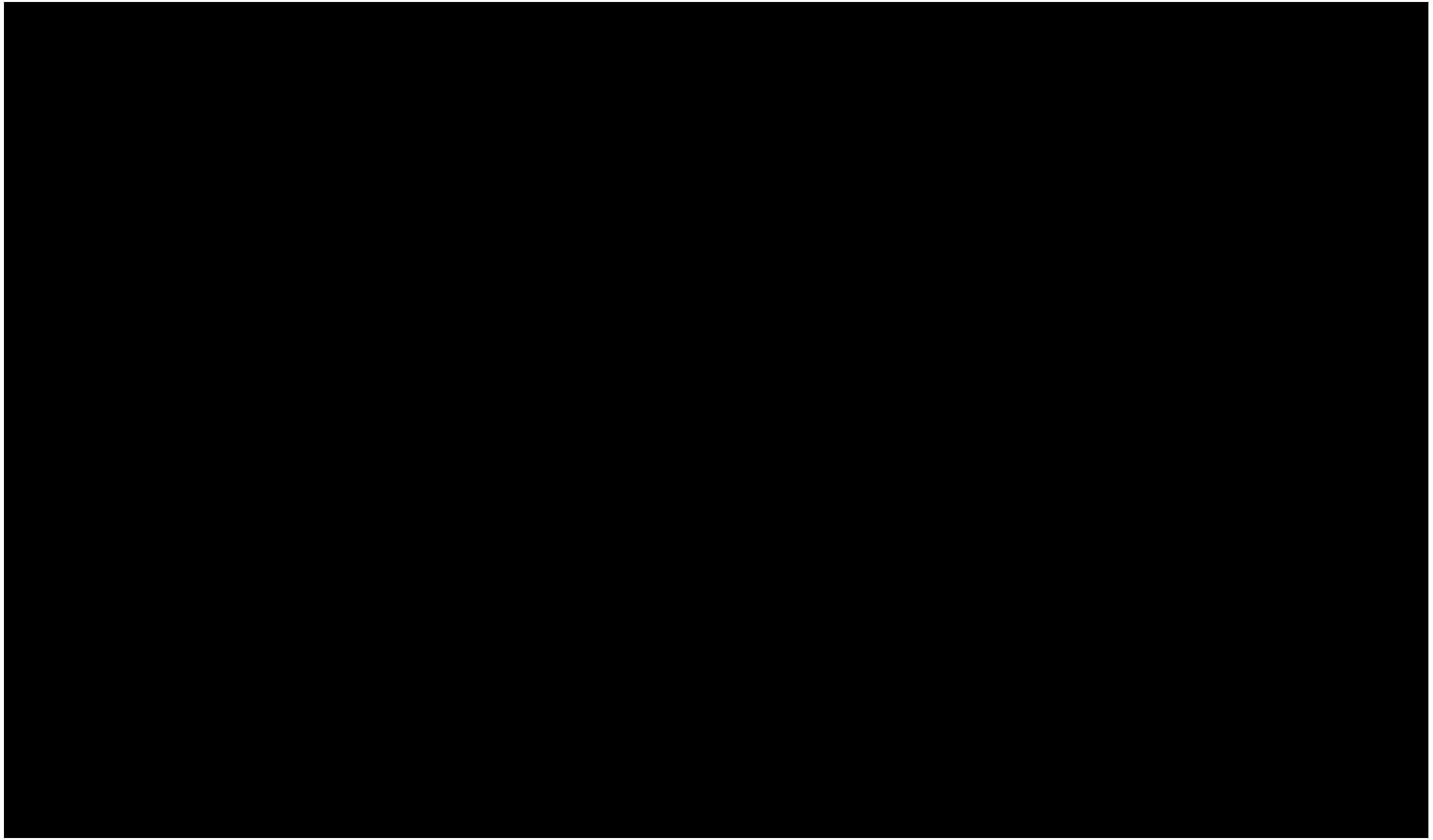
Session QG

Mainframe Myths, Mastery & Money

- The mainframe in popular culture
- The power of the mainframe – and your career
- Barriers to the mainframe and why they're just myths
- Mainframer behaviours and the big secret of the mainframe
- Economics of the mainframe

The Mainframe in Popular Culture



The All-Powerful Machine?

The World Runs on Mainframes

What %age of credit card transactions?	**85%**
How many transactions a day?	**30 billion**
How many ATM transactions per year?	**29 billion**
How many of the top 100 banks?	**92**
How many of the 25 top airlines?	**23**
How many of the world's top 10 insurers?	**10**
What % age of Fortune 500 companies?	**71%**

Source: ZDNet 'IBM z15 release shines light on how much is still being run on a mainframe' - September 2019 and SHARE blog 'Mainframe Matters: How Mainframes Keep the Financial Industry Up and Running' – January 2019

Just a Second…

5,787
Tweets

18,519
swipes

20,000+
Photos shared

63,000
searches

1,157,407
CICS
transactions

And who runs the mainframes?

It’s you…

And you’re rare…

Why mainframe workers are essential to bridge the tech skills gap – Silicon Republic – 2019

Mind the Gap: How Brexit will Affect Britain's Mainframe Skills Shortage – Computer Business Review – 2018

Last of the mainframers: Big Iron's Big Crisis – CIO – 2018

As Baby Boomers retire, the shortage of mainframe professionals grows more acute – Network World – 2017

What will happen when the skills needed to maintain mainframes become extinct? – Propylon – 2019

The Mainframe Skills Gap is Widening as a Generation of Mainframers are Retiring...Perhaps Only Automation Can Save Us – Infotel – 2019

You’re rare

You’re special

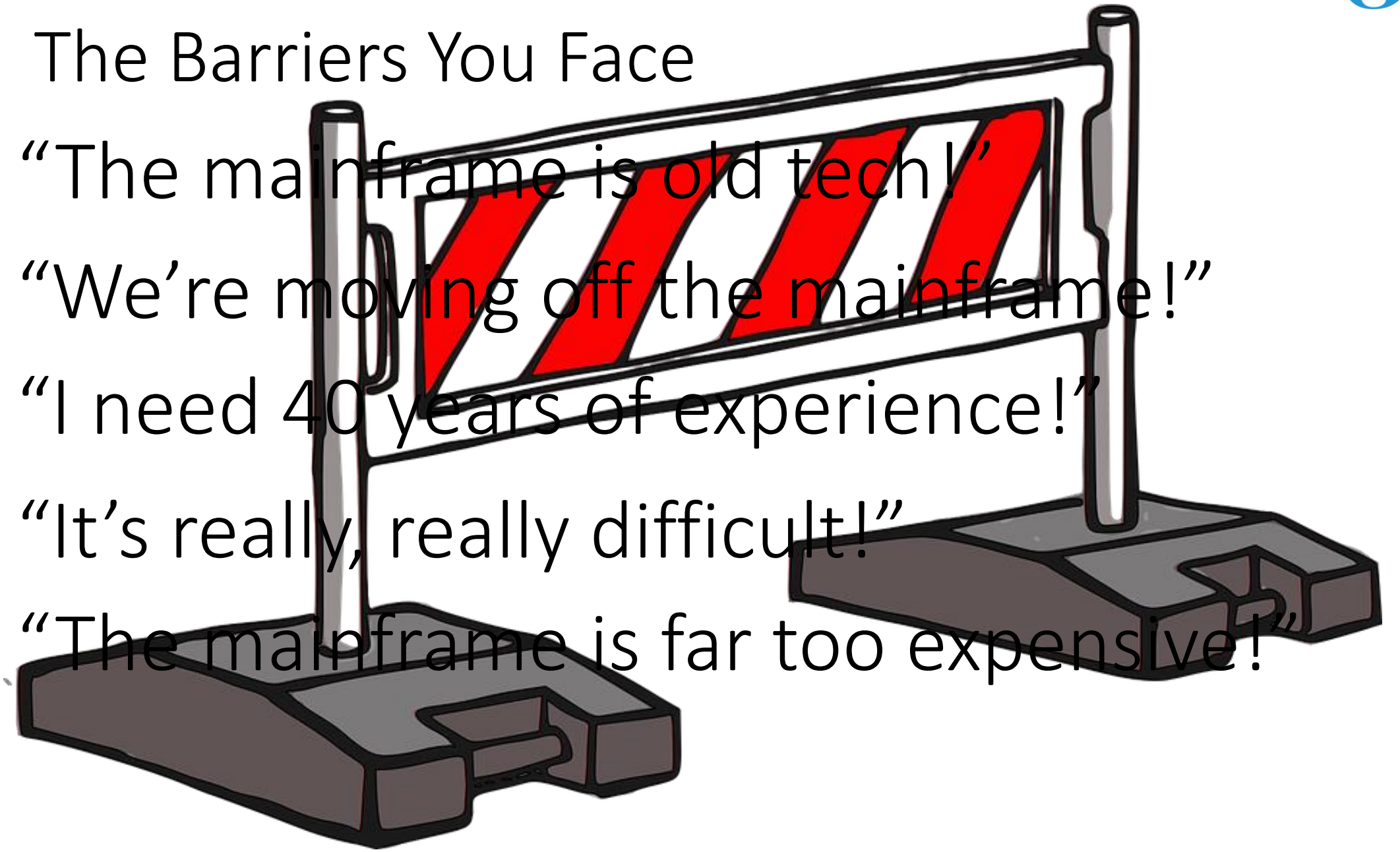
You’re doing the right thing

“Four reasons why next-gen developers should want to work on the mainframe” – ITProPortal – Oct 2019

Reason 1: It’s a prestigious role
Reason 2: Innovation starts on the mainframe
Reason 3: It’s varied and challenging work
Reason 4: It’s an open culture

https://www.itproportal.com/features/four-reasons-why-next-gen-developers-should-want-to-work-on-the-mainframe/

The Barriers You Face



"The mainframe is old tech!"

"We're moving off the mainframe!"

"I need 40 years of experience!"

"It's really, really difficult!"

"The mainframe is far too expensive!"

“The Mainframe is old tech!”

It used to be this.

It isn’t now

It now looks like this

It’s the same age as this

Porsche 911

4x Power increase over 50+ years

Mainframes now ~ 5 million times the original power

It now supports these and more

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Distributions

ubuntu Supported by Canonical

SUSE

redhat

Community Versions

debian

openSUSE

fedora

CentOS

Hypervisors

KVM

LPAR

DPM

Docker)

LXD (Ubuntu)

Languages

python

Ruby

php

R

ERLANG

Scala

Clojure

JS

OCaml

Java

Swift

Runtimes

nodeJS

RAILS

Zend framework (PHP)

OpenJDK

LLVM

Apache Tomcat

Management

CHEF

puppet labs

ANSIBLE

juju

openstack

kubernetes

vmware vRealize

urban{code}

Database

MariaDB

PostgreSQL

mongoDB

cassandra

IBM Cloudant

redis

MySQL

ORACLE Diamond Partner

DB2

Analytics

Spark

elasticsearch

Apache Solr

BLU Acceleration

THE LINUX FOUNDATION

OPEN MAINFRAME PROJECT

And is front and centre for Hybrid cloud

~~“The Mainframe is old tech!”~~

“We’re moving off the mainframe!”

Why do this?

- Concerns about skills and costs
- Trends
- FUD

How to offload

- Replace old apps with new apps

Or…

- Convert code to run under emulators on other platforms
- Replace all mainframe functionality with new tools
- Retrain everyone
- Run two infrastructures in parallel

- Possible… But not at all easy

Successful Offload

- French retailer - claimed in 2014 to successfully moved off after “2 years effort”
  - I worked there in 2008 and they were offloading then
    - 2008 – “It’ll be finished soon”
- Took them at least 8 years.
- Their own numbers show 110,000 man days
  - 489 years of effort!
- Their own numbers show 450 people on the project
  - At least €25M spent on labour alone.
- Their mainframe was small and the annual MF spend was less than $1M

Successful Offload

- EU shipping company – publically presented about their successful offload using a well know provider of offloading utilities
- Their own numbers do not include parallel running
- Their own numbers include ‘before’ but not ‘after’ labour costs
- Their own numbers include in a hasty resiliency add-on that alone is 60% of their old mainframe opex
- The migration overspent the budget by 48%
- The migration overran by 67%
- ROI over 5 years is -93%

What did they gain?

- Business stood still
- Big spend
- No return on investment

- Pyrrhic Victories

“We Don’t Like To Talk About It…”

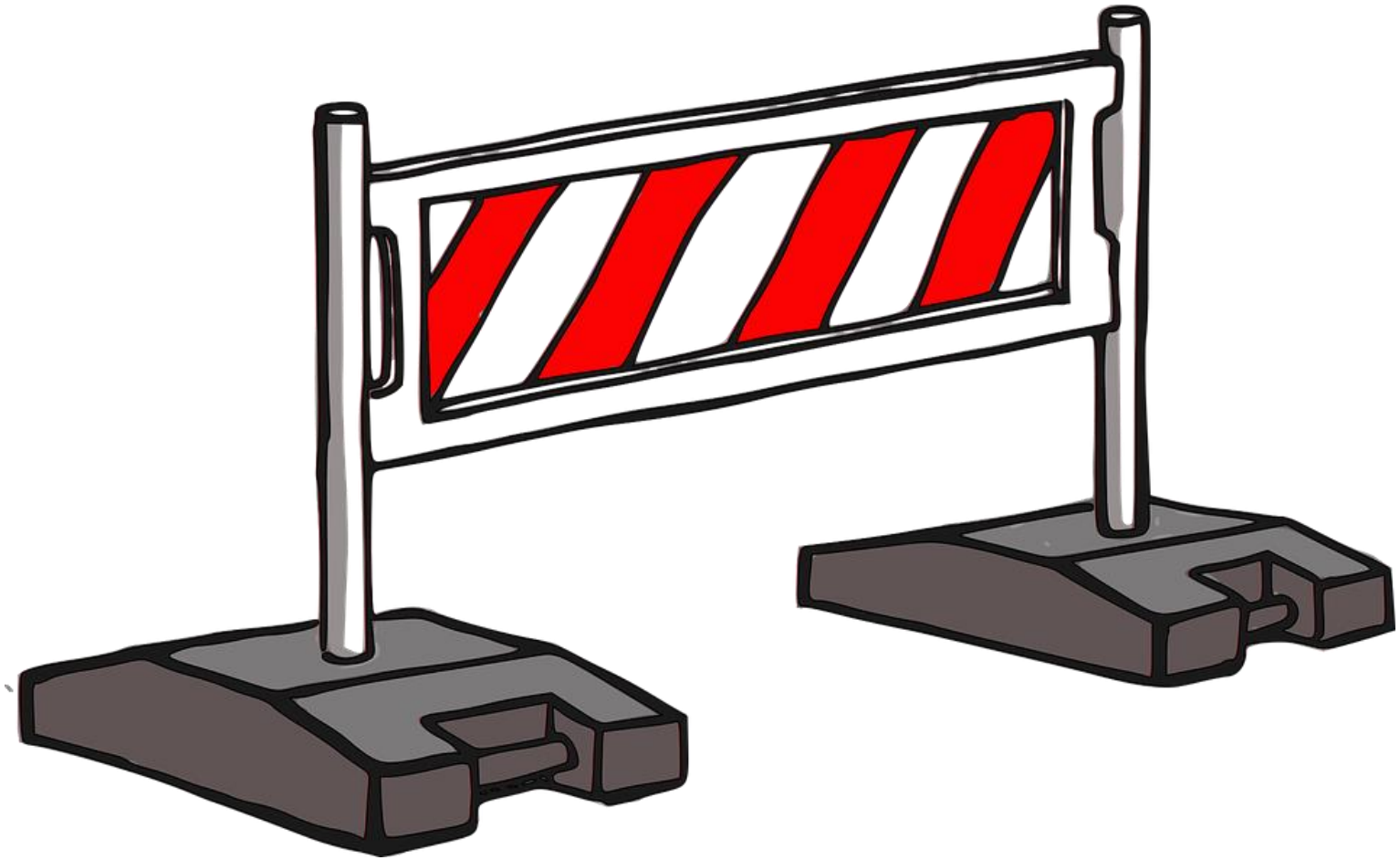
- European retailer - £300M spend to not get off the mainframe. While they were burning cash on this, their competitors rolled out internet shopping. They still have a mainframe.
- European bank - £50M on a failed offload. Still on the mainframe and growing it
- European bank – $100M to fail to move off IMS. Bought new mainframe hardware recently to continue to run IMS.
- European insurer – £60M on a failed offload. Now growing the mainframe.
- European financial services provider – huge, undisclosed costs on a failed offload. Now buying new mainframes

Trapped on the mainframe?

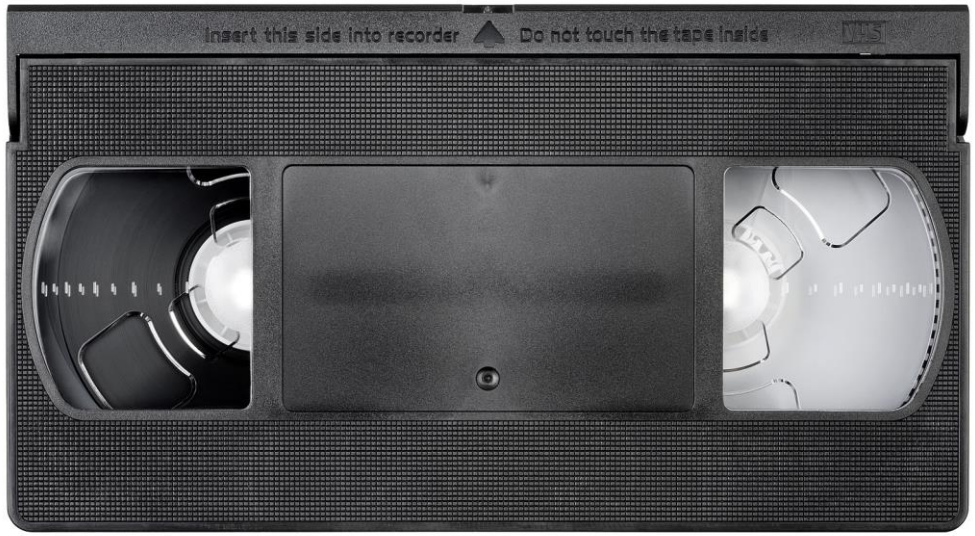
- Far from it…
- Use the Linux capabilities to consolidate other software onto the platform
  - ~90% reduction in software & environmental costs
- Modernise in situ
  - APIs & modern dev tools to open up the mainframe as an Agile environment
  - 19% savings over 5 years compared to not modernising

“We’re moving off the mainframe!”

“I need 40 years of experience!”



Nostalgia is overrated



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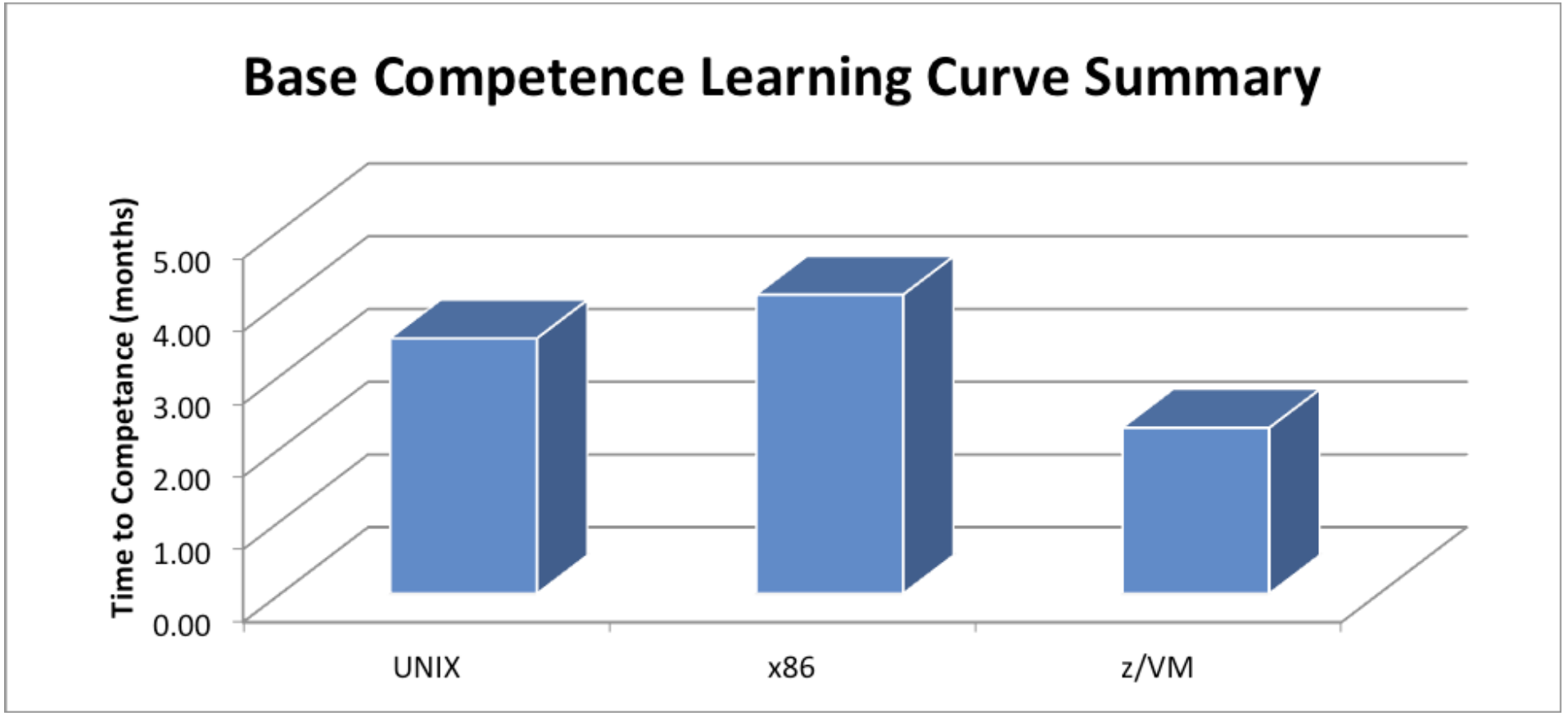
~~"I need 40 years of experience!"~~

“It’s really, really difficult!”

The Big Secrets of the Mainframe

- Logical Extrapolation is your friend
- They're not actually that difficult



- z/VM – Shortest time to competency – source Solitaire InterGlobal Ltd - Enterprise Virtualization with z/VM

The biggest mainframe secret…

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~~"It's really, really difficult!"~~

“The Mainframe is really expensive!”

So… How can you show that the mainframe is good value, Matt?

Get the overall operation costs and show how much of that goes on the mainframe

- Any publically-listed business will have its annual reports published on the net
- Overall operating costs and many other KPIs will be in this report
- Extract them and use them

Ask the question…

WHAT PERCENTAGE OF THE OVERALL OPERATING COST IS THE MAINFRAME COST?

Western European mortgage company

Less than 1000 MIPS

Mainframe cost is…

2.14% of annual operational costs

Eastern European bank

30,000 MIPS

Mainframe cost is…

2.25% of annual administrative costs

Eurasian bank

25,000 MIPS

Mainframe cost is…

2.2% of annual operating costs

UK bank

> 150,000 MIPS

Mainframe cost is…

0.9% of 2016-17 underlying profit

AND SO NOW WE SHOULD ASK…

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HOW MUCH OF YOUR BUSINESS RUNS ON THE MAINFRAME?

Probably quite a lot..

Remember… We saw these earlier.

72% of customer-facing applications have a mainframe component..

Mainframes consume only 6.2 percent of worldwide IT spend. Yet, they run 68 percent of production workloads

Source: ZDNet 'IBM z15 release shines light on how much is still being run on a mainframe' - September 2019 and SHARE blog 'Mainframe Matters: How Mainframes Keep the Financial Industry Up and Running' – January 2019

~~“The Mainframe is really expensive”~~

Myths…

"The mainframe is old tech!"

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"It's really, really difficult!"

"The mainframe is far too expensive!"

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Takeaways

The mainframe underpins the world

It’s modern, secure, reliable and not old tech

You don’t need years of experience to be good

The mainframe is not expensive

The mainframe has a bright future

And so do you

You’re in the right place…
At the right time…
Doing the right role…
With the right technology

You have a long, rewarding and enjoyable career ahead of you. Have fun.

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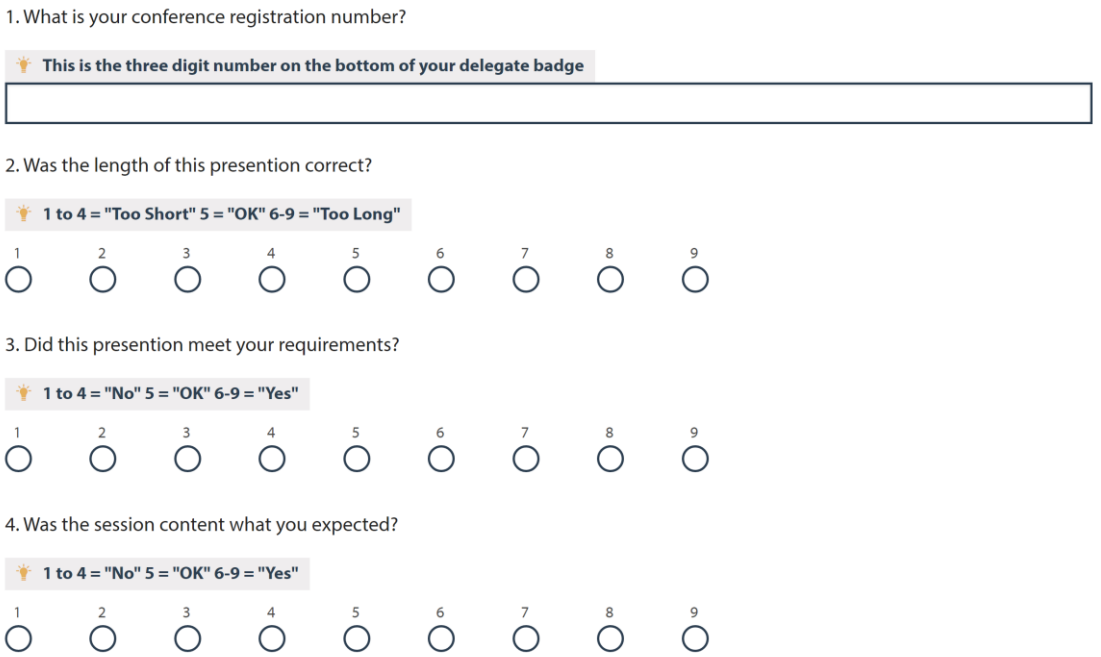
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