"

What do these three things have in common?
-Video games in the 80s and 90s
-A cyber security software company
-AI?

Today I'm going to tell you that story. First, a teaser, then some career advice, and finally a ground-breaking technology story.

*not a sales pitch!

TANIUM.

**29** AMMO  **97%** HEALTH  2 3 4 5 6 7 ARMS  **100%** ARMOR

BULL 157 / 200
SHEL 29 / 50
RCKT 0 / 50
CELL 0 / 300

1997
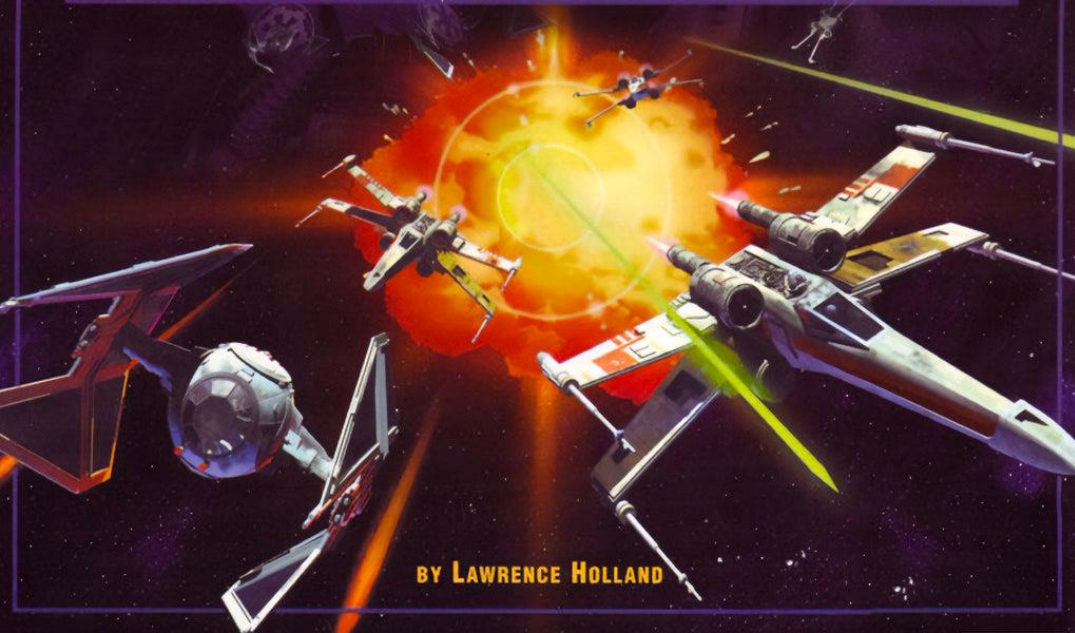
the first multi-player space combat simulator playable over the internet

# From the 80s to AI

Lessons learned from 40 years of riding the tech waves...

Ashley McGlone

**Product Enablement Architect**

**Tanium**

# The Technology Industry Career Path... PICK YOUR THINGS

After 40 years of messing with tech, here is my distilled wisdom...

- There will be a new thing (exciting!)
- You can learn and do the new thing
- You can update or integrate the old thing to the new thing
- You can build a career on the new thing
- The new thing will become the old thing (ie. tech debt, stale career)
- Every thing has bugs and support to wrestle
- Update your own new thing before it becomes the old thing and crushed by the competition
- Repeat

# At Microsoft 10 years ago...

- Active Directory was becoming the old thing
- I chose to ride the new PowerShell thing
- I chose not to ride the new Azure thing
- I changed to the new Tanium thing

- The new Tanium thing kicked my butt for a year, totally new, until one day I woke up and "I am Groot!"

- These were some of my things. Your things will be different.

# There are BIG new things and LITTLE new things

## BIG new things

- Industry disruptive technologies
- Change the way we work and create
- Open the door for a new wave of modes

## Examples

- GUI OS
- The internet
- Servers > Virtualization > Containers > Cloud
- Video games
- Video conferencing
- AI

## LITTLE new things

- Goods and services based on the big new thing
- Vendor implementations and frameworks
- Combining multiple things into a niche application

## Examples

- Microsoft Windows, Apple MacOS
- ISP – Internet Service Providers
- Azure, AWS, GCP, Kubernetes
- Asteroids, Doom, Steam
- Zoom, Microsoft Teams, Google Meet
- ChatGPT, OpenAI DALL-E, Gemini, Copilot, Canva

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# Modes

Timeless manifestations of technology things

- Expertise & experience - hands on, master the thing
- Software
- Hardware
- Security
- Legal
- Sales
- Entrepreneur - high risk, high reward
- Professional services, consulting
- Education - knowledge, speaking, writing, training
- Integrations - bridging old new
- Support - bugs and things going really badly, dirty jobs
- Operators - administration, implementation, support
- Users – the people who call us

# Observations on new things and modes

LAG and OPPORTUNITY

- Security always lags, agile hackers exploit new things
- Legal and compliance take forever to catch up
- Lots of profit in early innovation (ex. NVIDIA and AI chips)
- Boundless opportunity
- Many new companies start up on the new thing. Most of them fail and/or are acquired by the successful ones. That is called "consolidation".
- Products grow too large, over-powered, as they take on features to compete with their competitors, tech bloat, tech debt, innovation slows. Example: Slack, Teams, Zoom
- Everyone trying to include what the other does dilutes their core value prop
- Integration - someone has to make the old thing and new thing work together

Consolidation

Lag

Bloat

Integration

New Thing Opportunity

Old Thing
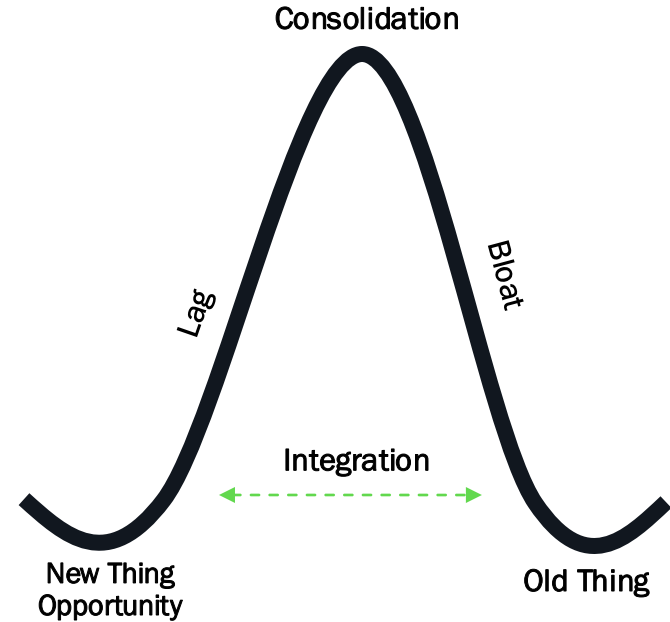
# Verticals

Do the new thing in context of a business problem

- Computer Gaming
- Finance
- Retail
- Manufacturing
- Sports
- Government
- Healthcare
- Entertainment
- Hospitality
- Etc.

# Personal Branding

Build a public persona as the answer person for the new thing and turbo your career

- Online
- On stage
- On camera
- On message

# The Technology Industry Career Path

Choose your own adventure

- Pick your new thing
- Pick your mode
- Pick your vertical
- Wrap some personal branding around it
- 💥 you have a career niche

# Pick your combo

## NICHE
### *The intersection of things*

### BIG new things
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### Vertical
- Computer Gaming
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### Brand
- Online
- On stage
- On camera
- On message

# Perspective

Juniors vs Seniors

**Juniors**

- only new thing knowledge
- moving fast ← your advantage
- excited

**TOGETHER!**

- Juniors teach the new thing to the seniors (old things)
- Seniors mentor juniors
- Collaborate on integrations for win/win

**Seniors (OG)**

- old thing 1 knowledge
- old thing 2 knowledge
- old thing 3 knowledge
- new thing knowledge
- probably moving slower

**Point:** Find a mentor and collaborator

*Now let's follow a software company example...*

# Getting to real-time internet gaming...

1983 Founder of Totally Games started writing games, including Apple IIe and C= 64

1989 Peter works for LucasArts one year

1990 Peter moves to Totally Games

    writes a 3D gaming engine for Secret Weapons of the Luftwaffe

    writes several titles including the Star Wars series
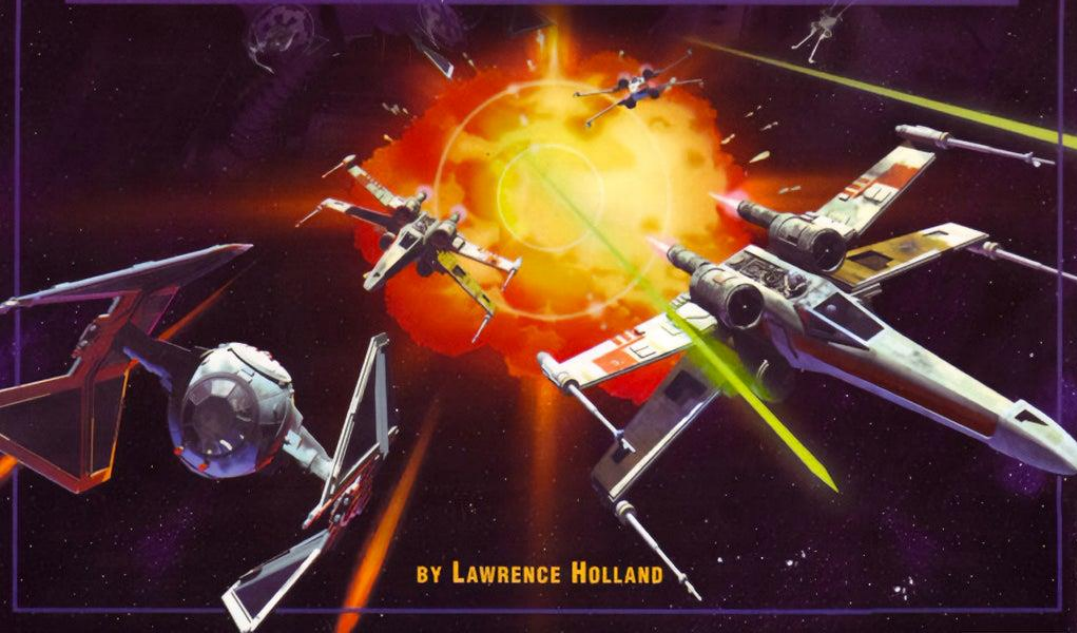
1993 Totally Games delivers several hit titles

1993 DOOM graphical four-player LAN play

1997 Totally Games delivers X-WING vs TIE FIGHTER for LucasArts

the first multi-player space combat simulator playable over the internet

# Speed?

LAN/Internet today vs 1990s dial-up

---

**Copilot**

A gigabit internet connection is **significantly faster** than a 28.8 kbps dial-up modem. To put it into perspective:

- **Gigabit internet**: 1 gigabit per second (Gbps) = 1,000 megabits per second (Mbps)
- **Dial-up modem**: 28.8 kilobits per second (kbps) = 0.0288 Mbps

So, a gigabit connection is **34,722 times faster** than a 28.8 kbps dial-up modem! This means you can download large files, stream high-definition videos, and browse the web much more smoothly and quickly with gigabit internet.

Do you have any other questions about internet speeds or technology?

# Speed?

LAN/Internet today vs 1990s dial-up

**Copilot**

Here's how long it would take to download a 1GB file over the two connection speeds:

- **Gigabit internet connection**: Approximately **8 seconds**.
- **28.8 kbps dial-up modem**: Approximately **77 hours, 9 minutes, and 37.78 seconds.**

The difference is quite staggering! With gigabit internet, you can download large files almost instantly, whereas with a dial-up modem, it would take over three days.

Is there anything else you'd like to know?

8 seconds
vs
3 DAYS

# Problems to Solve

- Add network game play to existing game engine
- Large number of objects with complex behaviors
- Infinite field of view (unlike DOOM dungeons)
- Peer-to-peer architecture, no server
- High latency (>1 sec) over low bandwidth (28.8k modem)
- Packet loss
  - TCP sequencing retries
  - TCP dies
  - UDP not in sync
- Lag "warping" object movement

# Solutions

- Got it working on LAN first, then moved to internet 💥
- Send only player actions, not object data
- Actions packets were small for low bandwidth
- Highest speed peer hosts the game
- Smooth out "warping" with predictive steps when lag detected
- UDP custom sequencing
- Send packet data of N & N-1 in one packet to cover dropped packets

# 1997! Wow!

| | X-Wing vs Tie Fighter | |
|---|---|---|
| Real-time action | ✅ | |
| Optimized large data | ✅ | |
| Low bandwidth | ✅ | |
| Peer-to-peer | ✅ | |
| Custom network protocol | ✅ | |
| Ground-breaking tech | ✅ | |

# Getting to real-time IT tools...

1983 Founder of Totally Games started writing games, including Apple IIe and C= 64

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1990 Peter moves to Totally Games, writes several titles including the Star Wars series

1993 DOOM four-player LAN

1993 Totally Games founded

1997 Totally Games delivers X-WING vs TIE FIGHTER for LucasArts

2000-2008 Peter writes for BigFix

2008-2023 Peter writes for Tanium

# Sound familiar?

*He did this in 1997 !?!?!?   Why did it take so long for enterprise IT?*

| | X-Wing vs Tie Fighter | Tanium |
|---|:---:|:---:|
| Real-time action | ✅ | ✅ |
| Optimized large data | ✅ | ✅ |
| Low bandwidth | ✅ | ✅ |
| Peer-to-peer | ✅ | ✅ |
| Custom network protocol | ✅ | ✅ |
| Ground-breaking tech | ✅ | ✅ |

# How long does it take to... ?

Why? 1997?

- refresh your asset hardware and software CMDB?
- scan all your endpoints for vulnerabilities?
- patch all your endpoints in a zero day fire drill? Best possible time?
- identify a bad patch and recall it?
- scope and remediate a security incident?
- set a registry value on every Windows machine?
- complete those audit reports?
- suppress malware lateral movement?

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# Tanium Architecture

AI & Autonomous Endpoint Management

Reporting & Workflows

Modules

Platform Questions & Actions
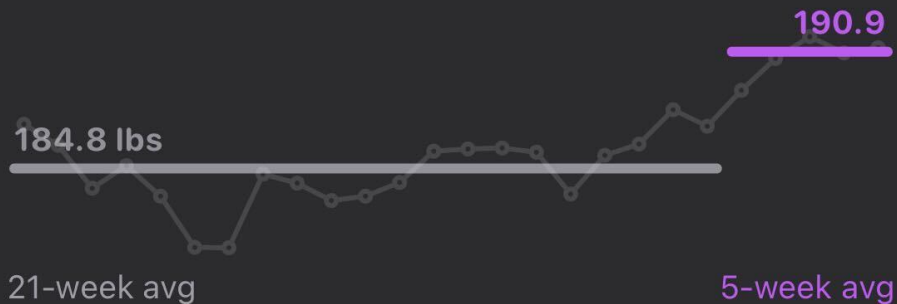
Real-time Architecture

TANIUM.

# The phone notification no one wants to see...

Thank you Thanksgiving and Christmas.



**Trends**

🚶 **Weight**

**Your average weight increased during the last 5 weeks.**

190.9

184.8 lbs

21-week avg                                   5-week avg

Need for a new approach that transforms how IT and Security teams identify and execute changes safely — at scale, with confidence, and in real-time.

# AEM Harmonizes Multiple Solutions

- Reliable automations within and across solutions

- Real-time intelligence on impact of actions

- Automated actions identified & triggered by confidence scores

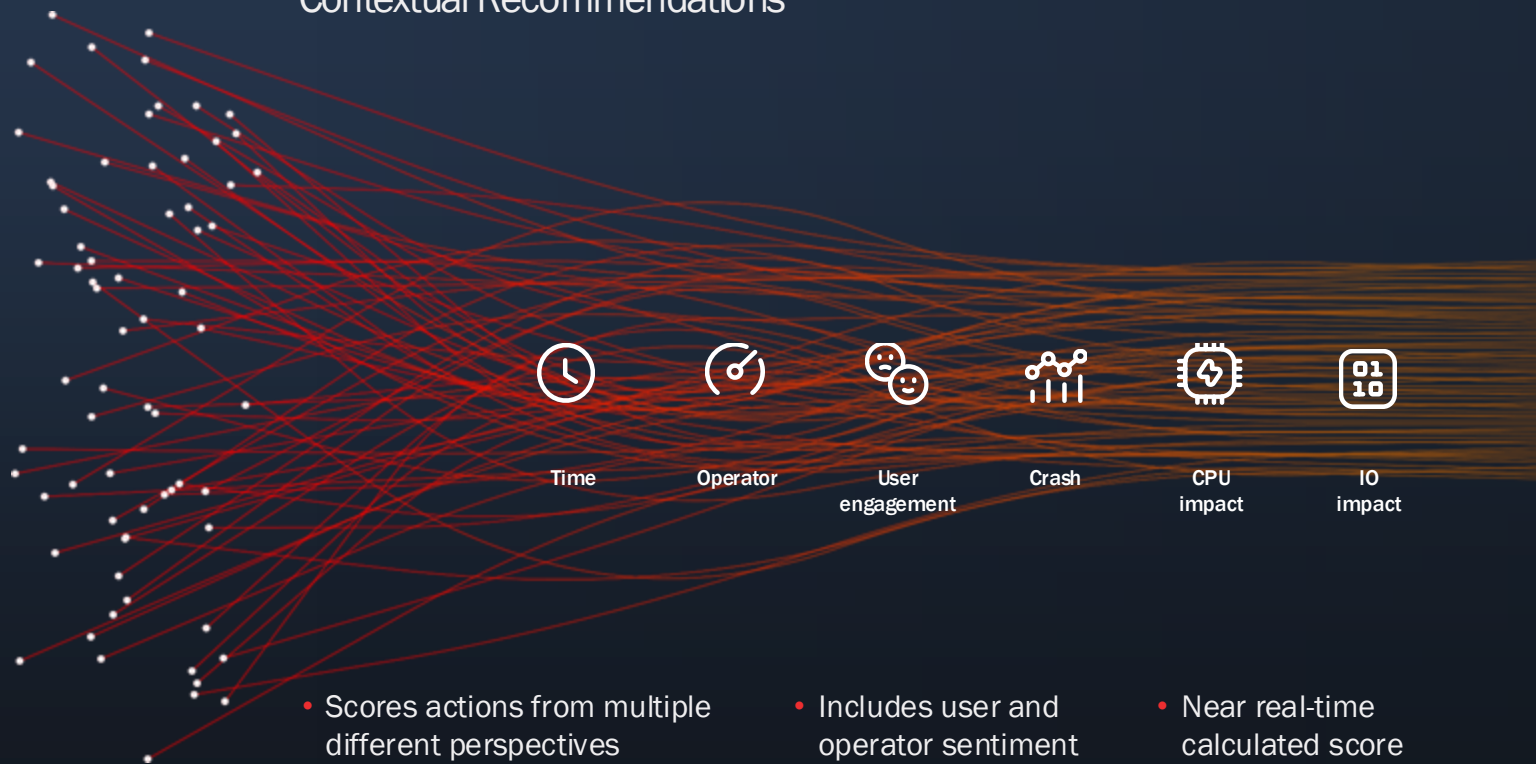| | |
|---|---|
| Asset Discovery & Inventory | Digital Employee Experience |
| Risk & Compliance | Incident Response |
| Endpoint Management | Automation & Orchestration |

# Real-time Global Intelligence

Decision making with confidence by understanding impact of actions

- Analyzes trends across millions of endpoints in real-time

- Uses a mix of different analytical and AI models

- Constantly updated for changing IT conditions and technologies

# AEM Insights Driven by Confidence Score

Contextual Recommendations

Time

Operator

User engagement

Crash

CPU impact

IO impact

- Scores actions from multiple different perspectives
- Includes user and operator sentiment
- Near real-time calculated score

# Deployment Templates and Rings

- Phased Ring based deployment

| | | | |
|---|---|---|---|
| **1** | Canary: 142 | Wait Time / Criteria | |
| **2** | General Test: 356 | Wait Time / Criteria | |
| **3** | ALL: 558 | Wait Time / Criteria | |

- Design to match business cadence

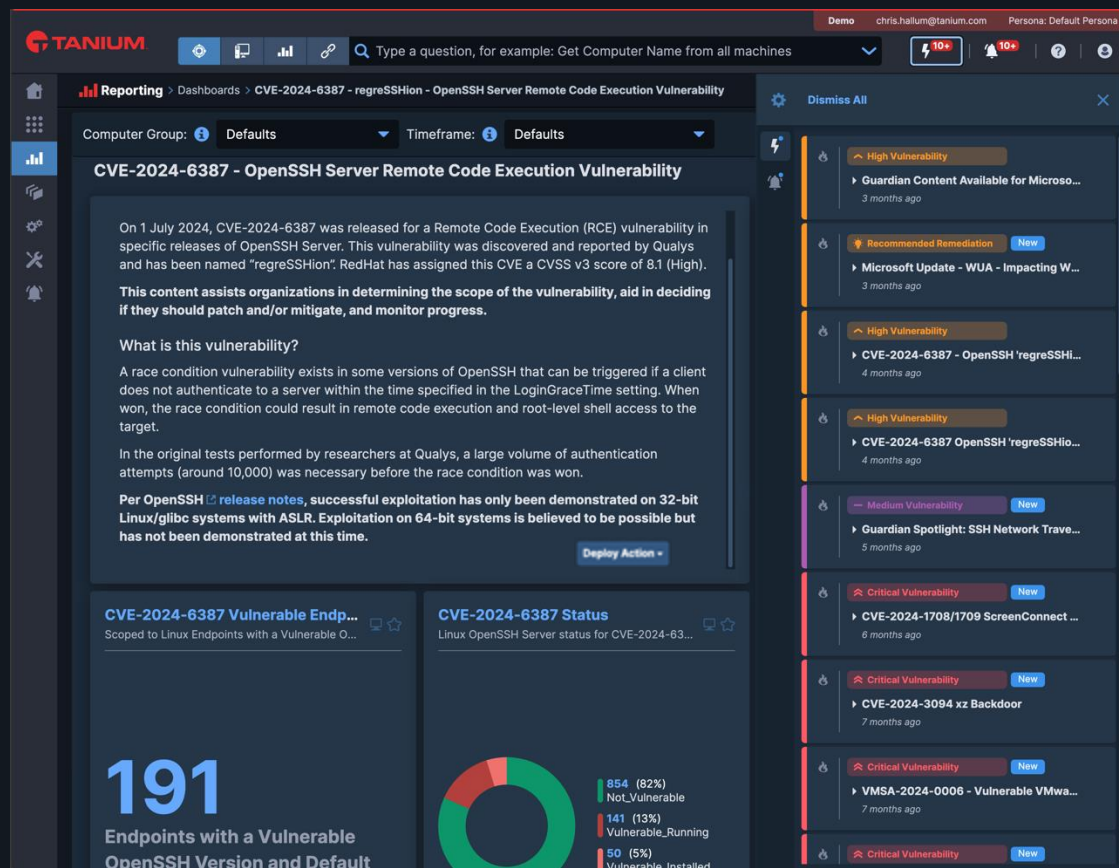- Operator maintain progression control

# Action Oversight
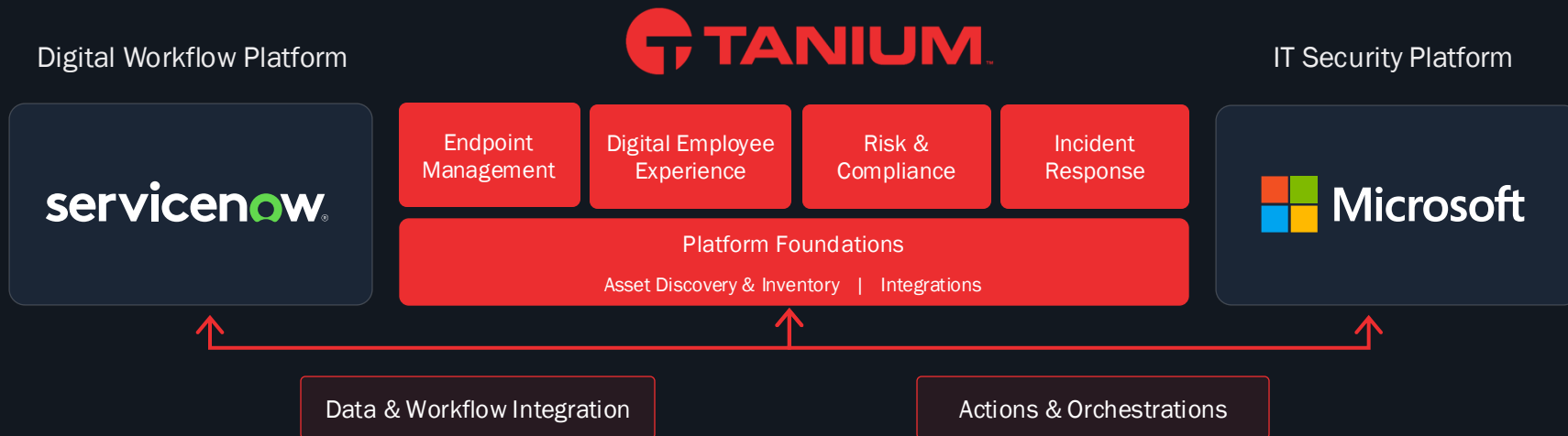
Ensures human operators are always in control

- Real-time system reporting and visibility of autonomous activity

- Visibility and control for diagnostic, planning and remediation

- Provides choice in levels of autonomy via operator controls

# Tanium Guardian

- Like a personal trainer for IT

- Real-time global intelligence combined with human intelligence

- Delivers critical vulnerability information direct to the Tanium console

- Easy pivot to available remediation

# Tanium the Real-Time Platform for AI

**TANIUM**

Digital Workflow Platform

IT Security Platform

**servicenow**

**Microsoft**

| Endpoint Management | Digital Employee Experience | Risk & Compliance | Incident Response |

**Platform Foundations**

Asset Discovery & Inventory | Integrations

Data & Workflow Integration

Actions & Orchestrations

# Tanium AEM Differentiators

## Real-time data at scale

True real-time visibility that's
foundational for any autonomous platform

## Converged endpoint platform

Breadth of actions supporting
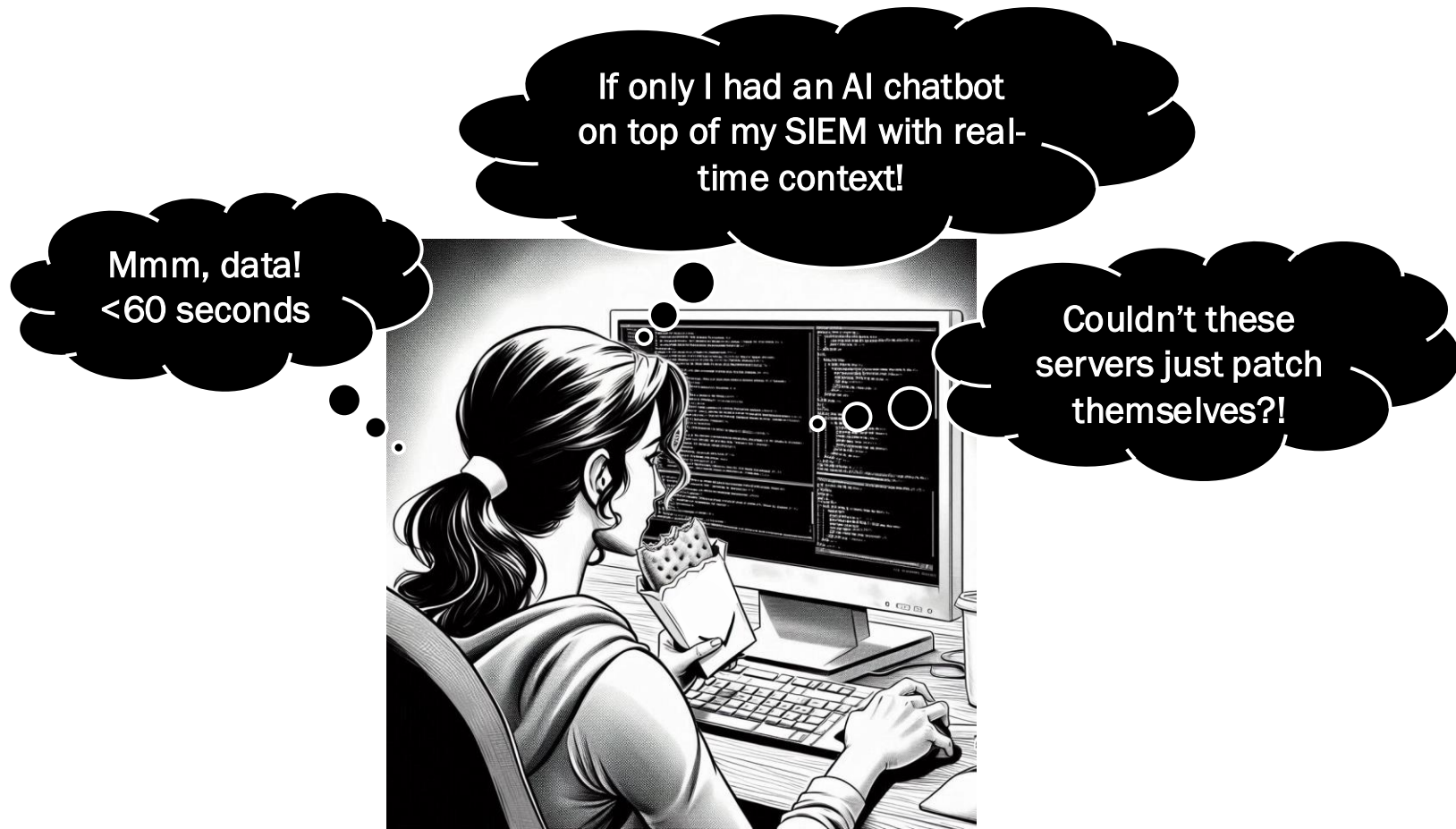IT Operations and Security teams

## Reliable and resilient automation

Confidence scores with deployment rings,
adapts to changing conditions

# AI SecOps Architecture

Conversing with your SecOps data sources from a single interface
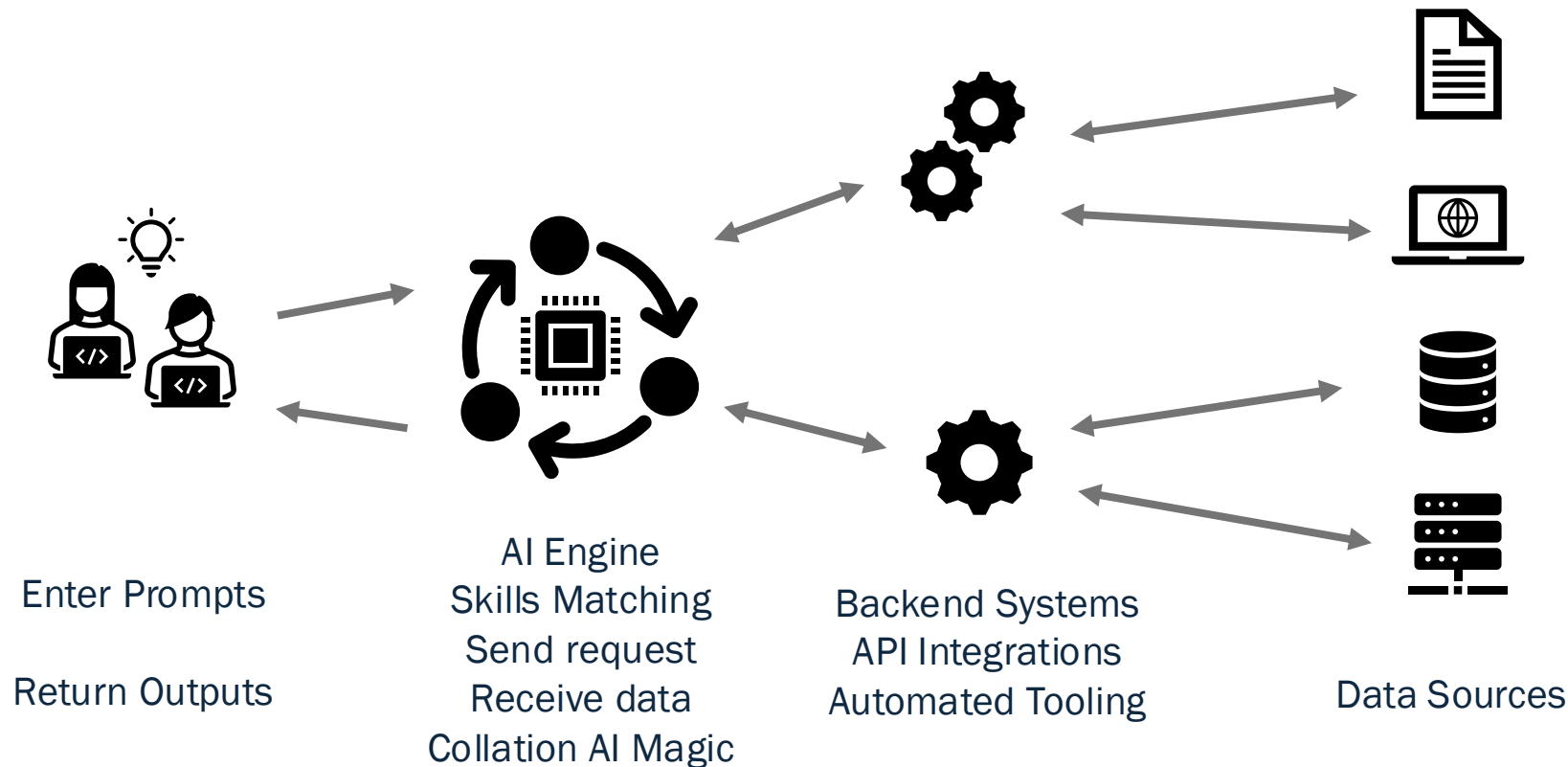


Enter Prompts

Return Outputs

AI Engine
Skills Matching
Send request
Receive data
Collation AI Magic

Backend Systems
API Integrations
Automated Tooling

Data Sources

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# Let's go!

*I've had 40 years of fun in tech.*

*Now it's your turn!*