Deliver resilient, fault-tolerant automations

Best practices in building fault-tolerant digital workers to adapt move faster and target specific business criticality with precise accuracy

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History

UNIQUE HISTORY

- Founded in 1995 by a group of scientists
- One of the largest CROs to be privately owned by its management
- Organically grown, & is present in more than 60 countries
- Headquartered in Switzerland

SIZE & STABILITY

- 2,300 employees, offices on six continents
- 250+ MDs on staff
- Exceptional repeat and referral rates
- AAA Swiss financial stability rating

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Full-service CRO
INNOVATION HUB
RBM Platform
Integrated CTMS
eTMF
Analytics
Project Planning Platform
TECHNOLOGY
Budget Tracking Platform
REGULATORY
Translations
Global Safety Reporting
Global Regulatory/IRB/Ethics Submissions
Medical Writing
Medical Training
MEDICAL SUPPORT
Biostatistics
BIOMETRICS
Data Management
Medical Monitoring
Scientific Advisory Board
Medical Consulting
Safety & Pharmacovigilance
Patient Retention
PATIENT ENROLLMENT & ENGAGEMENT
GLOBAL PROJECT MANAGEMENT
Vendor Management
Central Monitoring
Remote Monitoring
Legal Representation
LEGAL
Vendor Contracts
Site Contracts
Supply Chain Management
Event Management
CLINICAL TRIAL SUPPORT
Laboratory Support
eCOA Support
FEASIBILITY & SITE ID
GLOBAL START-UP
Patient Journey Mapping
Digital Recruitment
Patient Feasibility
QA AUDITS
CLINICAL OPERATIONS
On-site Monitoring
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Agenda: What are we talking about here?

RETURN ON INVESTMENT

- ROI can be in many forms. There are also many holes you can step into when looking to achieve this

AUTOMATION PRINCIPLES

- Guiding principles on how to drive a successful automation platform

DELIVERING RESILIENCY IN YOUR AUTOMATION PLATFORM

- Agile, and taking the Slight Edge approach
- Operational metrics
- Building fault tolerance & sustainability
  - Continued with examples
- Updates, upgrades, and patches...

ROI – Return on Investment

AUTOMATE THE MANUAL
Manual standard processes

AUTOMATE THE MUNDANE
Time intensive repeatable effort

AUTOMATE AS IS
Its not pretty but it's a process

GET IT DONE
Effort - Time = Value

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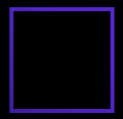
Automation Principles

LOOK FOR OPPORTUNITIES

Use the suitability checklist to take action

SUPPORT THE EFFORT

Define the effort, Document the processes & test the results -Show the value



COMMUNICATE EFFECTIVELY

Be sensitive to the perception of automation & impact to work

SUITABILITY CHECKLIST

- Steps are standardized
- Highly manual & repetitive
- Rule-based
- Readable electronic input
- Low exception rate
- High volume

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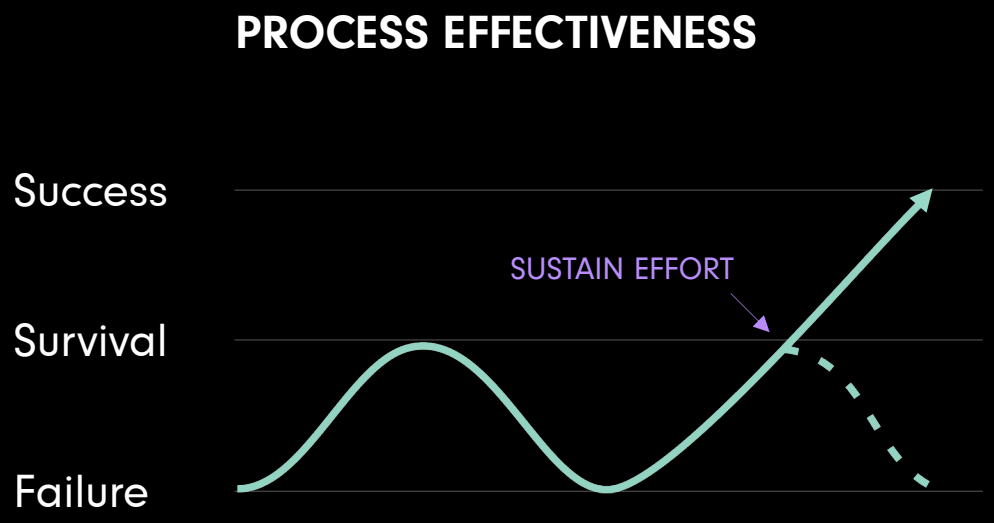
Automation & Process Effectiveness

LET'S DEFINE THE PROBLEM

- Automated processes can break & change
- Bots or the process they are running can be fragile
- It can be common to see re-work even after being deployed into production



The Slight Edge: simple daily disciplines, little productive actions, repeated consistently over time add up to the difference between failure & success

The Slight Edge (2005)
Turning Simple Disciplines Into Massive Success & Happiness
by Jeff Olson

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CoE Operational Metrics?

RPA CoE teams should be spending effort and putting it back into the RPA platform

RPA works very well iterating with Agile and Scrum. If you look to build your sprints and the effort within them using the 80/20 rule. You could see the Pareto Principle in action!

USE THE 80/20 RULE

The Pareto Principle states
that roughly 20% of inputs are responsible
for roughly 80% of outputs in most systems

80% - Of your CoE's effort is focused on ROI

20% - Of your CoE's effort is focused on platform resilience

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Building Fault Tolerance & Sustainability

Thinking about your current RPA platform. How do you monitor and control your current RPA effort?

- Do you have automated processes that fail?
- When automated processes fail, is it common for the team to manually run it again to resolve the issue?
- Maybe you have accounts or passwords that reset every 30/60/90 days?

HOW DO WE MAKE FAULT TOLERANT AUTOMATED PROCESSES?

The simple answer is to look at your current automated processes. Evaluate which ones have the most volatility. Determine and catalog the issues you have had in the past with those particular automated processes. Creating a chart is a good way to prioritize which automated process to tackle first

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Building Fault Tolerance & Sustainability

CONTINUED: EXAMPLES

EXAMPLE 1: WEB SCRAPING

Use Case: Using RPA you most likely have an automated process that scrapes data from different websites. You then take that data, export it, and massaged it into usable data.

Fault Tolerant Process: Prior to running the automation, have the same bot login to the system or virtual machine. Then clear that system's internet browser's cache. Creating this quick process has added countless hours back, whereas previously you could get strange or non-reproducible issues without it. By adding this preemptive automation you can then resolve issues before they surface

Building Fault Tolerance & Sustainability

CONTINUED: EXAMPLES

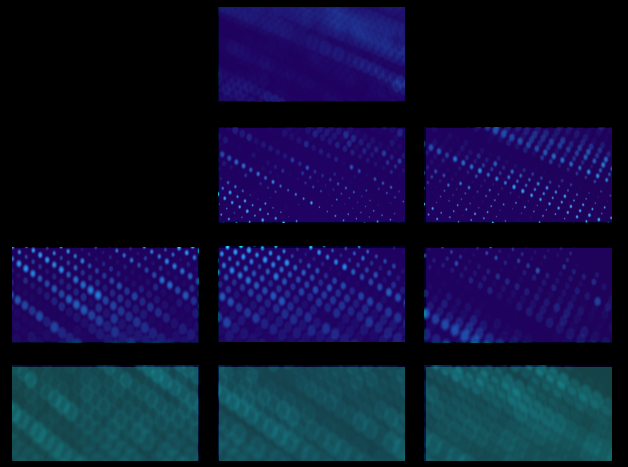
EXAMPLE 2: VIRTUAL MACHINE REBOOT

Use Case: Many RPA teams use different virtual or even physical systems to manage their automated processes.

Fault Tolerant Process: All systems, either virtual or physical, have limited resources. These systems have system memory and video memory that can become heavily taxed. What you could do here is to have the virtual machine reboot after running some of your larger automated processes. Setting triggers to perform at different events, at the end of the day, or at the end of a cycle. Regardless of the timing, utilizing a process like this can shore up vital system resources

Building Fault Tolerance & Sustainability

CONTINUED: EXAMPLES



EXAMPLE 3: SCOUT BOT

Use Case: RPA teams have a lot to maintain and updates are one of them. The RPA platform needs to continually mimic the production environment within your company or enterprise.

Fault Tolerant Process: If you have built your automation efforts in a way that any bot can run any process. What this provides is a cycle of any one bot or virtual machine being able to run all processes overtime. This is important if you were to utilize a Scout Bot since you will have a particular bot to always be updated first before updating the rest of your bot systems

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Maintenance of your RPA Platform

VENDOR UPDATE

- Microsoft Patch – Tuesday!
- You screen scrape a third-party site to find they changed their layout overnight!
- A Website gets updated and the button you used to click is now called *<VAR>!*

VIRTUAL MACHINE UPDATES

- Windows KB patch
- Office O365 update
- Enterprise pushes new Malware or Virus patches

BOT & PROCESS UPDATES

- Version control of your processes
- Don't silo your processes
- Treat your bots as digital workers

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Thanks for joining us at Forward IV

Want to learn more about how we're building resilient and fault-tolerant automations?
Let's connect!

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