Outpace the Competition: Optimize Cost, Speed, and Quality Through Hybrid Cloud Automation and Self-Service

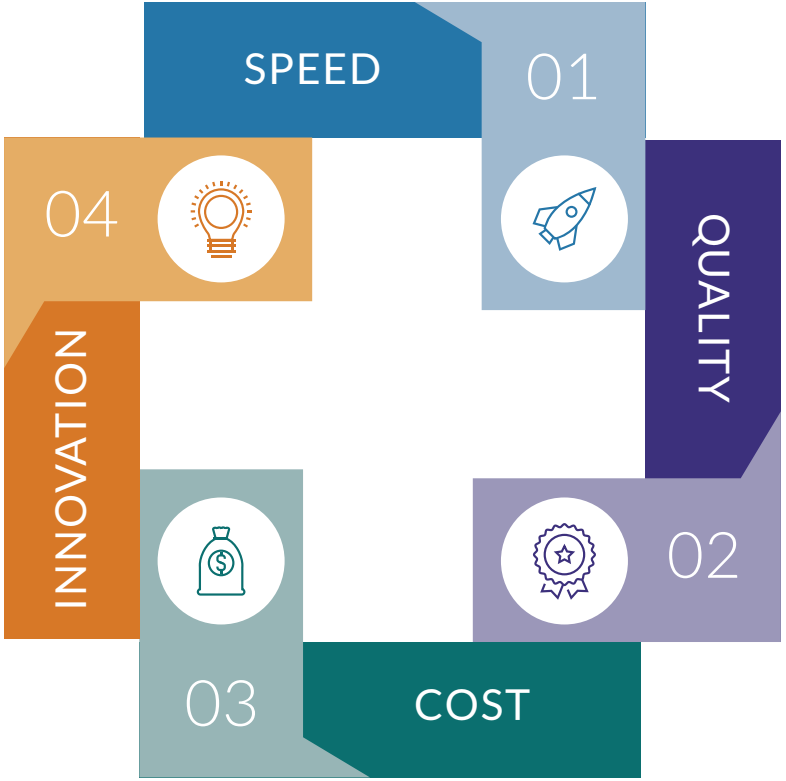
An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) Infobrief
Prepared for Morpheus Data
By Torsten Volk
August 2020

EMA™ IT & DATA MANAGEMENT RESEARCH, INDUSTRY ANALYSIS & CONSULTING

Lack of Automation Results in a Vicious Rectangle

Relying on developers and corporate IT to complete a vast range of manual tasks for application deployment and day 2 operations limits the organization's ability to release new software features at the required pace and forces executives into tradeoffs between speed, quality, cost, and innovation.

These tradeoffs lead to the constant risk of being outperformed by competitors who have figured out how to eliminate human labor as the key limiting factor for continuous value creation.



The more manual tasks a release requires, the more costly this release will be. To bring down cost, an enterprise can lower quality, release new software more slowly, or tune down R&D (innovation).

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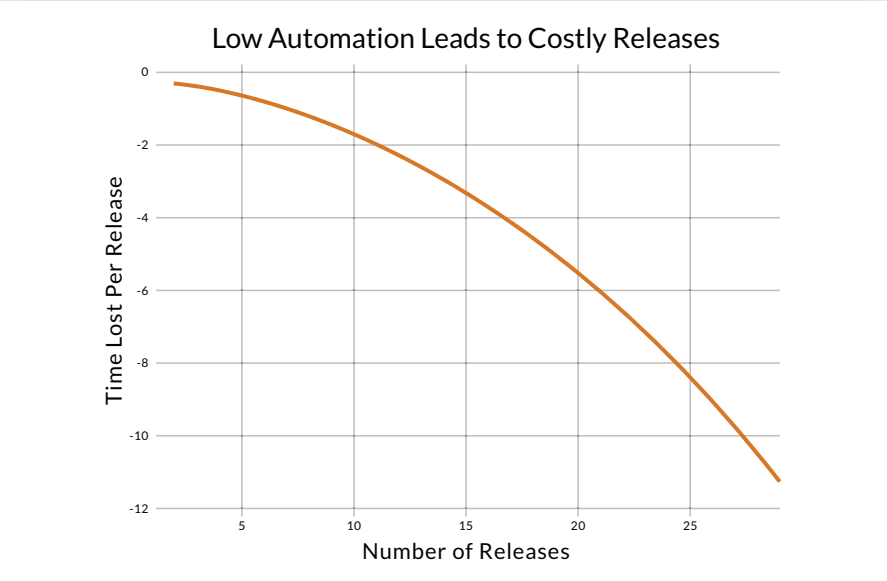
Manual Provisioning Slows Down the Enterprise

A lack of automation can lead to the absorption of the majority of human productivity into purely release-related activities. As the number of new releases per time period increases, the increased coordination overhead results in exponentially rising release costs.



The chart shows how a linear increase of the number of monthly releases (x-axis) results in an exponential increase in release overhead (y-axis) Source: EMA automation research: data models (2020)

Exponentially Increasing Time Requirements per Release

# of Weekly Releases	Preparation Days per Release: **Low Automation**	Preparation Days per Release: **High Automation**
1	4 Days	4 Days
10	6 Days	4 Days
25	13 Days	4 Days

Symptoms of Low Automation

- Frequent provisioning bottlenecks
- Application code managed separately from infrastructure code
- Constant challenges synchronizing development, staging, and production environments
- Constant struggle to get developers and operators on one page

Result: Need to add staff proportionally to infrastructure demand.

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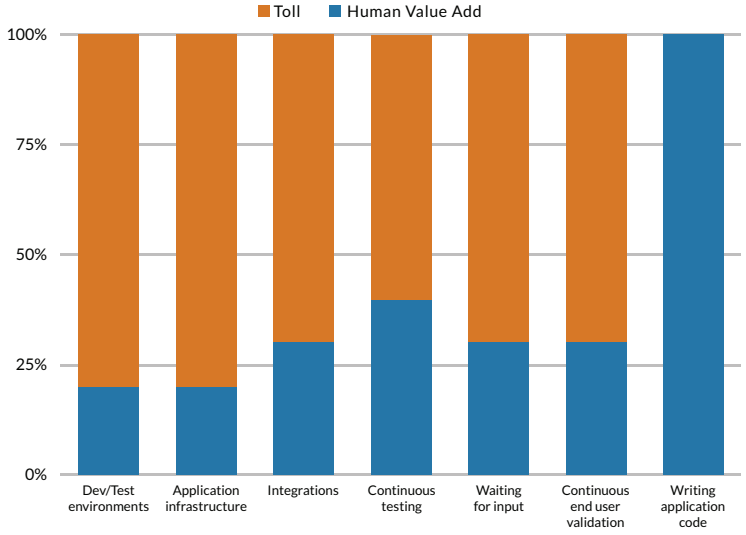
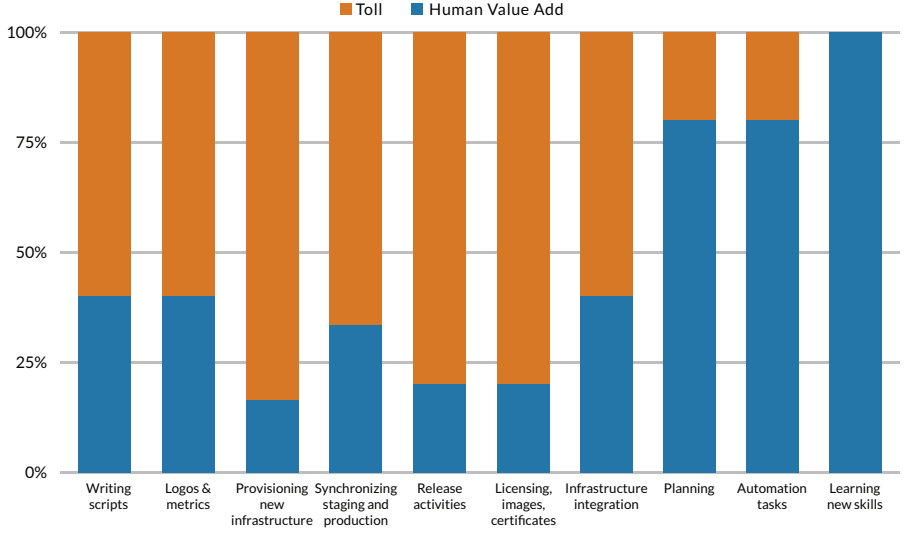
Developers and Corporate IT Operate at Less Than 50% Productivity





As developers and corporate IT typically operate at only 50% of their optimal productivity, freeing up the other "unproductive" 50% of their day could eliminate the vicious rectangle of cost, speed, quality, and innovation.

If developers and IT engineers work on automating and integrating release and day 2 automation tasks instead of creating unicorn solutions for each release and operational challenge, this would enable organizations to release more frequently at only a minimal marginal cost for each additional release.

The Business Impact of Automation and Self-Service

Automation and self-service enable IT operators and DevOps professionals to focus on the definition of optimal processes for developing, building, testing, deploying, and validating new code. When each additional release only comes with marginal overhead, enterprises can achieve a state of continuously and incrementally releasing and validating new software capabilities exactly when they are needed, without worrying about increasing operational risk or release cost.

The vicious rectangle of cost, speed, quality, and innovation often pressures developers and IT organizations into a spiral of detrimental choices, such as:

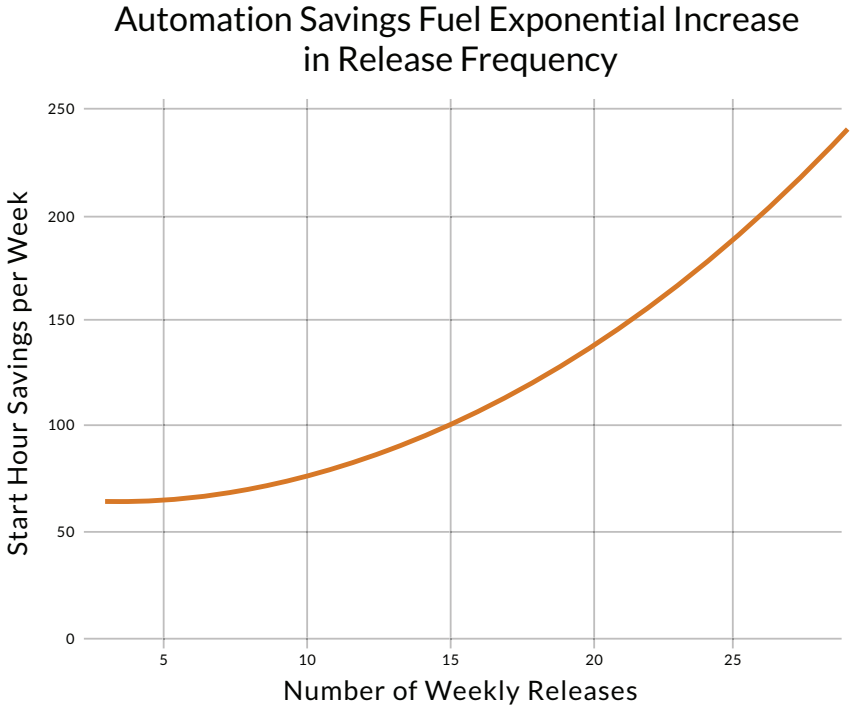
- Should I deliver on time and ignore best practices?
- Should I cut corners to make my deadline at the expense of difficult product deployment?
- Should I replace scalability tests by leveraging results from similar tests that were done in the past, but in a different context, and add some risk for later down the line?
- Should I make more assumptions about how my software will be used, or should I take the time to learn from existing transaction logs?
- Should I write code that works on different infrastructure platforms or speed things up by writing only for the initial set of target cloud APIs?

These choices, by definition, increase release and operational risk.

Automation Enables Self-Service and Increases Human Efficiency and Innovation

Automation minimizes the cost overhead of each additional release (marginal release cost) by enabling the required self-service provisioning of most or all of the infrastructure, platform, database, application, and integration services via CLI, API, or GUI.

These savings enable enterprise developers to maximize their time spent on better understanding end-user requirements, focusing on R&D activities to provide higher quality software. The closer the overhead cost for each additional release, the more timely development teams can respond to changing market requirements and the more they can lower the risk of disruption by continuously spending time on rolling out and validating new capabilities that anticipate future customer needs.



The chart shows the exponential staff hour savings (y-axis) as a consequence of an increasing number of highly automated releases.

Double Developer Productivity Through Hybrid Cloud Automation and Self-Service

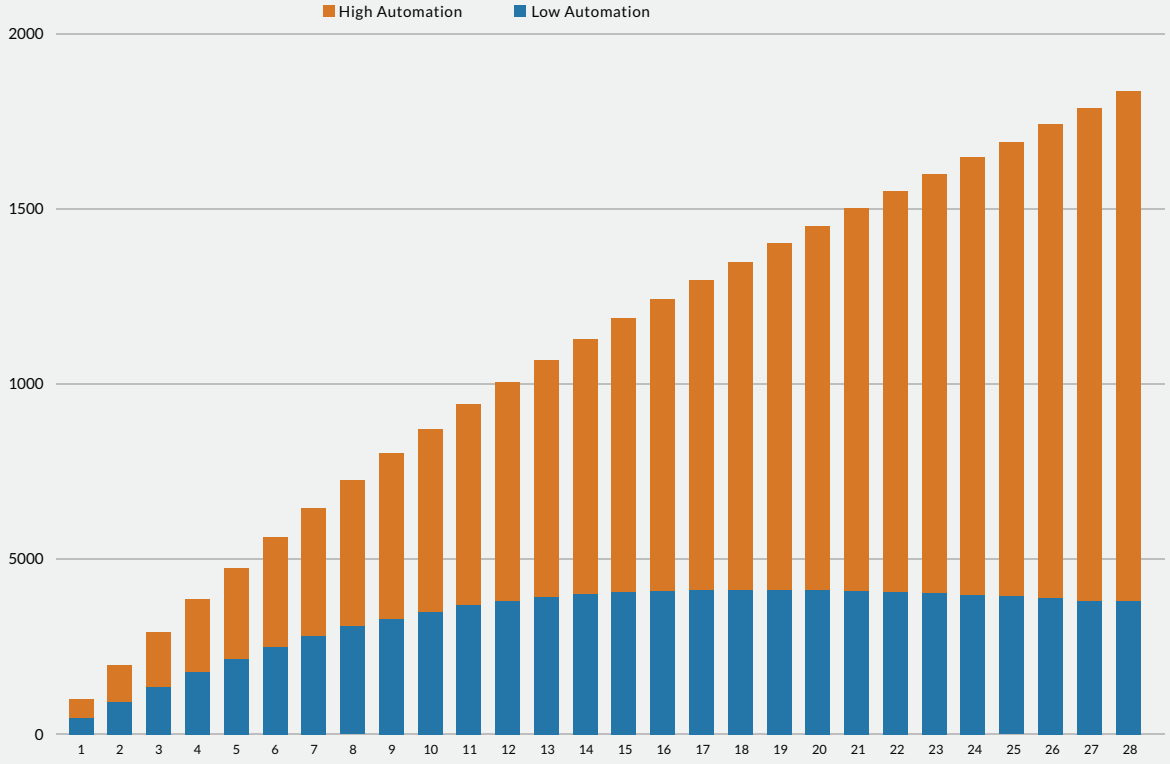
Developer Tasks	Daily Time Requirement	Automation Savings
Create and maintain dev/test environments	10%	80%
Define and deploy application infrastructure	10%	80%
Integrate with enterprise systems and DevOps toolchain	10%	80%
Continuous testing and validation of quality, security, compliance, performance, and integration	5%	80%
Waiting for input, approvals, infrastructure, and code from other teams	10%	80%
Continuous end-user validation	10%	80%
Productive development of business features	45%	N/A

Automation-enabled self-service frees up 700h/month for the average 10-person development team

Source: EMA automation research, data models (2020)

Up to Four Times More Software Features

Highly automated enterprises can increase their release cadence and receive a much higher number of software features per year compared to enterprises with low automation



Automation as a Key Business Differentiator

Well-automated organizations are able to widen the gap compared to poorly automated ones by continuously releasing and validating an exponentially higher number of new software capabilities without the need to increase team size.

EMA Quick Take:

Automation in IT operations and DevOps is rapidly becoming a critical differentiator in the marketplace.

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Summary: Optimizing Quality, Cost, Speed, and Innovation Through Automation and Self-Service

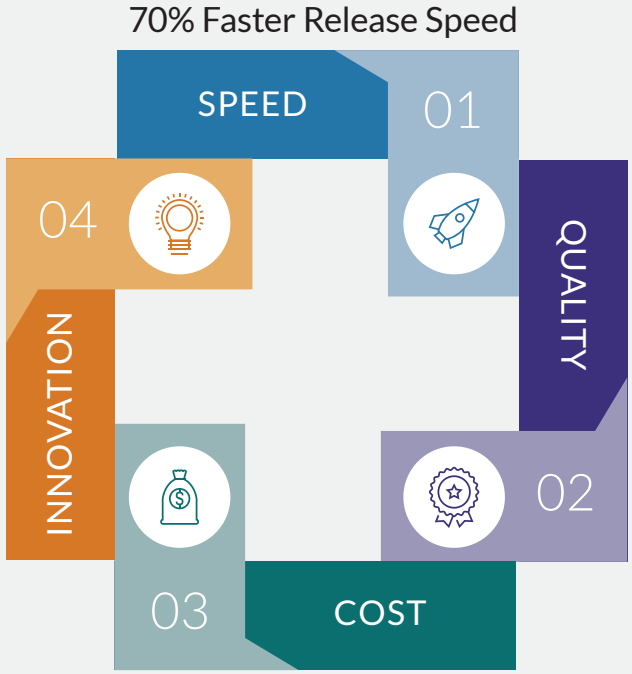
Automation-driven self-service

80% fewer release-related tasks

50% Increase in Operator Productivity

50% Increase in Developer Productivity

4x More Software Features



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Corporate Headquarters:
1995 North 57th Court, Suite 120
Boulder, CO 80301
Phone: +1 303.543.9500
www.enterprisemanagement.com

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