

***Elegant MicroWeb***  
Delivering the Value of Technology

# White Paper

The Crucial Role of DevOps in Enterprise Digital Transformation





ELEGANT MICROWEB

## The Crucial Role of DevOps in Enterprise Digital Transformation

---

### White Paper

#### Abstract

With the advent of this new reality of global competition and the concept of digital transformation, every organization has had to look long and hard at its processes, including crucial IT design, development, integration and support activities. For Digital Transformation to work, the organization must operate in a world of continuous change with an appropriate mitigation of risk and delay. DevOps can play a crucial role in supporting these business initiatives, but it is clear that DevOps must evolve if it is to fulfill this obligation.

<https://www.ElegantMicroWeb.com>  
[info@ElegantMicroWeb.com](mailto:info@ElegantMicroWeb.com)

Elegant MicroWeb Copyright 2018. All rights Reserved.  
Elegant MicroWeb is a trademark of Elegant MicroWeb. All other trademarks are  
the property of their respective owners.



## Table of Contents

Introduction .....	4
The Reality of Digital Transformation Initiatives.....	6
Assessing DevOps Readiness .....	9
Integrating DevOps into a Digital Transformation Initiative.....	11
Conclusion.....	12
About Elegant MicroWeb .....	12



## Introduction

This white paper is about the importance of digital transformation in a business model and the crucial, yet often times overlooked, role played by DevOps in the continuous digital transformation process. But, in order to truly understand the foundational role of digital transformation and how DevOps supports that role, one might start with the inner workings of the human body.

Creating an environment that engenders business agility is akin to cellular regeneration in the human body. Whether the body is healing from a wound or simply doing its best to remain healthy, it must regenerate cells and perform maintenance and monitoring activities on a daily basis. There is no stopping. The body operates 24/7 with processes and resources dedicated to supporting the immune system, generating new cells and monitoring heart, lungs and other functions.

Business agility is not so different. In order to remain healthy and competitive, an enterprise must be agile enough to function on a day-to-day basis, plan for the future and ensure that the business is positioned for any type of change, growth or unanticipated issue or opportunity. There is no time to shut down and perform internal reviews, testing or major organizational changes. Changes must be made on the fly.

With the advent of this new reality of global competition and the concept of digital transformation, every organization has had to look long and hard at its processes, including crucial IT design, development, integration and support activities.

One of the corners of the IT domain that has been most profoundly affected by the era of constant change is the testing community. The old testing environs have been transformed from simple testing done by developers and performed as an afterthought to dedicated test teams performing automated testing, regression testing, stress testing, security testing, load testing, manual testing, user acceptance testing (UAT), usability testing, mobile application testing, functional testing, application performance testing, and detailed use case testing. But, all of this testing takes time, and up until very recently, it was done at the end of the development cycle, slowing the implementation and integration process and making it impossible for businesses to remain competitive and to address the need for new, cutting-edge tools.

The introduction of the DevOps concept (Development/Operations) complicated matters further, as processes, interdependencies and collaboration forced more rapid change and the development team was asked to walk hand-in-hand with the IT operational arm of the organization.

So, it is no surprise that the idea of Digital Transformation is a daunting one to imagine when one realizes that this transformation does not occur within a finite period of time but rather, like cellular regeneration, it is happening every day and will continue to happen every day into the future. As new technologies, stressors and demands are placed on the organization, every team member within the organization (including DevOps) must do their part but, as any CIO can tell you, the role the technology team plays is much larger than many other departments and divisions within the company.



## Understanding DevOps

DevOps is an approach to development that integrates software development with the information technology operational arm of the organization. The idea is to streamline and shorten the development life cycle and ensure that upgrades, patches, and other ongoing projects are handled swiftly to support the objectives of the organization. In order to accomplish these myriad activities, DevOps must use automated testing, monitoring and integrated tools that look across the entire infrastructure to identify issues, opportunities and upcoming needs within the enterprise.

The DevOps portfolio of services and tasks includes:

- ✓ Short-term and long-term planning of projects and systems maintenance and support
- ✓ Code development and source code management
- ✓ Integration of tools and an overall project map
- ✓ Continuous testing and planning
- ✓ Release planning, packaging and management
- ✓ Configuration, monitoring and management of infrastructure
- ✓ Application performance management and monitoring and user feedback loops

Buried in this rather overwhelming list of responsibilities is one of the more difficult responsibilities: 'continuous testing and planning'. This single line item requires an entirely different mind-set from the testing community of old but the reality of Digital Transformation has made it one of the most crucial responsibilities of the DevOps team.

## The Era of Digital Transformation (DX)

When we think of the word 'digital', we think of technology and there is no doubt that technology is part of the equation but it is not the only factor. As the internet ages, it brings with it innovations and access that has never been seen before and the societal changes cannot be overstated. Consumers and company employees expect to have access to the best tools and these users do not expect to have to take additional technology training to leverage, and use, these tools. New apps, new search analytics and a new way of connecting humans around the globe has changed the way people work and live and this change is ongoing.

The term 'transformation' is appropriate because it represents a phase or stage in which change is constant and outcomes may be hard to predict. We might certainly have anticipated a reduction in paper but we probably could not have anticipated the changes that social media would make on our culture.



As businesses grapple with Big Data, the Cloud, natural language processing and machine learning, consumers and business users create new ways to use this newly accessible data and information and developers create new apps and tools.

It is up to the wise business to capitalize on these rapid changes but to do so, the business needs to reinvent its teams, processes and agility. There is no doubt that the age of Digital Transformation will generate billions in additional revenue worldwide over the coming decade and if we consider the role DevOps can play in supporting these business initiatives, it is clear that DevOps must evolve if it is to fulfill this obligation.

## The Reality of Digital Transformation Initiatives

With all this talk of challenges, why would any business want to embrace the idea of Digital Transformation? The first reason is simply one of pragmatism. If the business does not change to remain competitive, it is not likely to succeed. No matter how difficult it may be to support these changes, it will be more difficult to survive without this transformation. No matter the type of business, there are opportunities everywhere!

### **eCommerce:**

Large eCommerce giants like Amazon have illustrated the advantages of the digital world but they have also faced the realities of data breaches. Online sales initiatives are an obvious choice but continuous testing and monitoring is mandatory if the business is to succeed. DevOps should manage transactional operations as well as customer satisfaction and user interface projects to ensure uniformity and agility for growth and change.

### **Hospitality:**

Consider the changes the travel arena has undergone in the past two decades. As digital transformation evolves, businesses like Hotwire, Expedia, Priceline, and AirBnb have changed the way travel is booked, and the way they communicate with travelers and upsell trips. DevOps will certainly be involved in data security but can also support integration of partner services, the stability of the infrastructure and the ability of the business to further disrupt a rapidly changing business landscape and gain a competitive advantage.



**In-House  
Systems:**

Agility and digital transformation comes in many forms and in-house systems is just one of them. Systems for training, events, project management and other areas can be leveraged to make the business more agile. If the enterprise has multiple locations, the business can save money by holding online informational and training events complete with live engagements and testing and documentation for training completion. Projects can be managed with input from multiple team members, no matter where that individual is located. DevOps will be especially important to these initiatives as rapid transformation is also taking place in other areas within the business and agility in process, task and training initiatives is equally important.

**Healthcare  
Systems and  
Providers:**

From provider and insurance networks to medical centers and healthcare records management, digital transformation is happening now and it is happening quickly. Many hospitals have moved from hard copy records and charts to tablets and hand-held devices that can access information about a patient at the bedside. Cross-checking medication allergies, managing insurance payments to providers and sending reminders of appointments to patients; it is all digitized today. DevOps is extremely crucial to this process, for both developing and testing new systems that contain life-saving information to ensuring privacy and government regulations are satisfied. The healthcare industry must ensure that DevOps is part of the process on a daily basis to monitor networks and identify and anticipate changes, working with regulators, and staying abreast of lawmakers and upcoming changes to requirements.



**Financial Services:**

Banking, investing and other financial services industries are changing the way they do business with digital services for transferring funds and changing investment strategies to sending and receiving digital documentation and identifying fraud and risk before it happens. DevOps must create high-performing, scalable infrastructure that is capable of handling the industry and government data and information security requirements and will perform at the desired speed with great UI and thoroughly tested features and functionality.

**Entertainment:**

This is perhaps the most obvious and largest growing area of digital transformation with apps, streaming and virtual reality. Old standard entertainment industries like movie theaters and television and music have changed rapidly with downloads, streaming services and custom search services designed to anticipate what a viewer or listener wants. Because these tools are constantly changing, integrating and being upgraded, DevOps is crucial to the stability and dependability of these tools and features. Monitoring volume, usage and anticipating changes as projects come through the pipeline will keep the DevOps team busy.

These are just some of the industries that are going through changes related to Digital Transformation. In fact, every other industry in the world has also experienced this type of rapid change. And, that is where DevOps comes in.





## Assessing DevOps Readiness

We have talked about the reality of Digital Transformation and the new world of DevOps. Now it is time to discuss readiness because the truth is that while you may have a Digital Transformation initiative and a DevOps function, that DevOps function may not be ready to support the Digital Transformation initiative in a meaningful way.

Like everything else in the Digital Transformation era, DevOps readiness is dependent on agility. The organization and its processes, activities and team members must be organized in a way that will support agility and that constant cellular regeneration we discussed earlier.

While the DevOps organization may be structured in a way that supports rapid and agile development, it must also have procedures and processes in place to ensure that systems, infrastructure, apps and other IT components are kept evergreen and that organizational growth and changes to products and services are anticipated and included in the overall roadmap of services and support.

For Digital Transformation to work, the organization must operate in a world of continuous change with an appropriate mitigation of risk and delay. The strategic view of DevOps readiness must consider numerous factors:

**Organizational Structure and Culture** - Is DevOps structured in a way that ensures collaboration? The old 'silos' of IT and development are no longer viable. Beyond that collaborative structure and culture, the team must also consider how it communicates with other organizations, e.g., product development, management, etc. If there is no process in place to anticipate projects and changes, DevOps cannot strategize to provide resources and automation and processes to support the 'new' organization of tomorrow. Vision, mission and strategy must support the overall picture of the competitive organization. Planning for training, skills, project resources and ongoing upgrades, monitoring and equipment must be part of the big picture. If the DevOps organization is not part of this planning and day-to-day operational picture, it will not be able to support Digital Transformation. Organizational alignment is key!

**Tools and Processes** - DevOps cannot provide enough human resources to manually test and manage all of the projects or ongoing issues so it is imperative that the DevOps team have the equipment and skills to automate and ensure continuous delivery, including testing, management and monitoring. The team will need to review automation capabilities for deployment, testing, configuration, data extraction, transformation and loading, infrastructure, app monitoring, security, and infrastructure monitoring and management.



**Skills, Knowledge and Collaboration** - To support the needs of an organization throughout its ongoing Digital Transformation, the DevOps team must have cutting-edge skills and knowledge (either in-house or through a partnership with an IT consulting company), and it must implement training, management and rewards programs that are designed to encourage collaboration, sharing and partnerships across the organization. Its team must champion agility and continuous improvement and testing. There is no room for territorial behavior in the new world of Digital Transformation. The organization should look for redundancies and ensure that the right team members are given responsibility for the right issues. It must review processes and tasks, eschewing the protectionist, defensive strategies of old. DevOps must be seen as an equal, important party at the table and so must all other collaborators. If these initiatives are to be successful, the DevOps organization must be part of the mainstream fabric of product development, competitive strategies and other critical factors of success.

It is important to note that few, if any, organizations will find that DevOps is 'ready' to support Digital Transformation with no changes required but this should not discourage the enterprise. Make the changes necessary to succeed. These changes will pay dividends far into the future. This process will require a thorough and comprehensive review of DevOps and other organizations and a planned deployment of changes to support the new environment, but it is well worth the investment.



## Integrating DevOps into a Digital Transformation Initiative

The path to a DevOps organization that can provide seamless, continuous testing, continuous improvement and support for the Digital Transformation initiative and environment takes planning and a commitment from the top of the organization all the way down to the individual team members but, if it is done correctly, the transformation will greatly benefit the enterprise.

## Benefits of DevOps Support of Digital Transformation

- ✓ A collaborative, agile organization that can better endure market changes
- ✓ Resource retention and team member satisfaction
- ✓ Improved customer satisfaction and ability to rapidly shift to support new customer needs
- ✓ More dependable systems and solutions
- ✓ Assured security and data privacy compliance
- ✓ Improved support for innovative new products and services
- ✓ Decrease in time to market
- ✓ Improved support to test and prove concepts quickly and with reduced risk
- ✓ An integrated skill and knowledge base that will better anticipate issues and opportunities
- ✓ A strategic roadmap for upgrades, projects and ongoing costs and resource requirements
- ✓ Improved control of incremental changes with reduced risk and impact on the organization
- ✓ Improved ability to anticipate and manage growth in volume, location, user base, new technology, etc

Buried in this rather overwhelming list of responsibilities is one of the more difficult responsibilities: 'continuous testing and planning'. This single line item requires an entirely different mind-set from the testing community of old but the reality of Digital Transformation has made it one of the most crucial responsibilities of the DevOps team.




## Conclusion

With the advent of this new reality of global competition and the concept of digital transformation, every organization has had to look long and hard at its processes, including crucial IT design, development, integration and support activities. For Digital Transformation to work, the organization must operate in a world of continuous change with an appropriate mitigation of risk and delay. DevOps can play a crucial role in supporting these business initiatives, but it is clear that DevOps must evolve if it is to fulfill this obligation.

Understanding how DevOps can inform Digital Transformation is just the first step. If Digital Transformation is to succeed, the organization must assess DevOps readiness and review its culture, structure, processes and strategy to make the changes necessary to support continuous improvement, continuous testing and a constantly changing technology landscape within the enterprise.

## About Elegant MicroWeb

For more than twenty years, Elegant MicroWeb has served clients and partners in many countries and industries at the enterprise and start-up size, and its customer satisfaction ranking is excellent. Elegant MicroWeb is an ISO 9001:2015 certified, software products and services company, offering white label partnerships for IT providers and agencies to enrich their product and service offerings. Its flagship ElegantJ BI business intelligence solution has evolved to the Smarten Advanced Analytics product. The Smarten approach to Advanced Analytics, includes Assisted Predictive Modeling, Self-Serve Data Preparation and Smart Data Visualization. Gartner has listed the Smarten product as a representative vendor in multiple reports, including the Gartner Research Market Guide to Self-Service Data Preparation, as a Niche BI and Analytics Vendor in the Gartner Report, Competitive Landscape in the BI Platforms and Analytics Software, Asia/Pacific, as a Representative Vendor in the Gartner Market Guide for Enterprise-Reporting-Based Platforms, and a Listed Vendor in the Other Vendors to Consider for Modern BI and Analytics, Gartner Report.



EMR1005WP - The Crucial Role of DevOps in Enterprise Digital Transformation - Version 1.0 - Published 2018  
Copyright © Elegant MicroWeb Technologies Pvt. Ltd (EMTPL), all rights reserved

This document contains information that is proprietary and confidential to EMTPL, which shall not be disclosed, transmitted, or duplicated, used in whole or in part for any purpose other than its intended purpose. Any use or disclosure in whole or in part of this information without express written permission of EMTPL is prohibited.

Any other company and product names mentioned are used for identification purpose only, and may be trademarks of their respective owners and duly acknowledged.