Building Better
Digital Products



DevOps Service

G-Cloud 14 Service Definition Document

gravity9: Building Digital Platforms, Turning Legacy Complexity into Digital Agility

gravity 9



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Introduction

It's never too early to modernize, but it can be too late!

Legacy complexity is a by-product of your success; your organization has grown and your applications and platforms have grown to keep up and support your ever-changing needs. However, many established organisations initiated their operations before modern solution architectures emerged, while today's proven patterns and practices offer efficiency and longevity.

- **74%** of organizations that experience data breaches are due to vulnerabilities in legacy systems - Ponemon Institute
- **52%** of fortune 500 in 2003 no longer exist today
- **45%** improvement in customer satisfaction for organizations that prioritize modernizing applications - Forrester Consulting

Don't become a statistic!

Legacy systems often struggle with the volume of digital transactions, fail to store necessary data for insightful analysis, and face challenges in meeting regulatory compliance. This hinders innovation and agility, resulting in slower time-to-market. New organisations, unencumbered by legacy systems, possess native agility but lack your expertise, breadth of services, resources, and trusted brand. Imagine leveraging modern architecture to enhance your wealth of experience and capabilities.

gravity9 propels you beyond complex, outdated legacy solutions to a sleek AI-led, micro-service, micro-UI platform enabling continuous innovation.

Our application modernization approach leverages cutting-edge AI technologies and microservices architecture to streamline your operations and drive continuous innovation. With our sleek micro-UI platform, we empower your business to adapt and thrive in today's dynamic market landscape, ensuring agility, scalability, and sustained competitive advantage. Say goodbye to the constraints of the past and embrace a future where innovation knows no bounds with gravity9.

Cloud Technology

For organisations not in the cloud, transitioning to a cloud-based infrastructure is fundamental for modernizing as it offers unparalleled scalability, flexibility, and accessibility. By leveraging cloud technologies, businesses can streamline workflows, improve collaboration among teams, and enhance overall efficiency. Moreover, cloud-based solutions enable real-time data analytics, empowering organizations to make informed decisions swiftly. Embracing the cloud also ensures better resilience against disruptions, as data and applications are securely stored and accessible from anywhere, providing continuity even in challenging circumstances.

Don't just modernize – revolutionize!

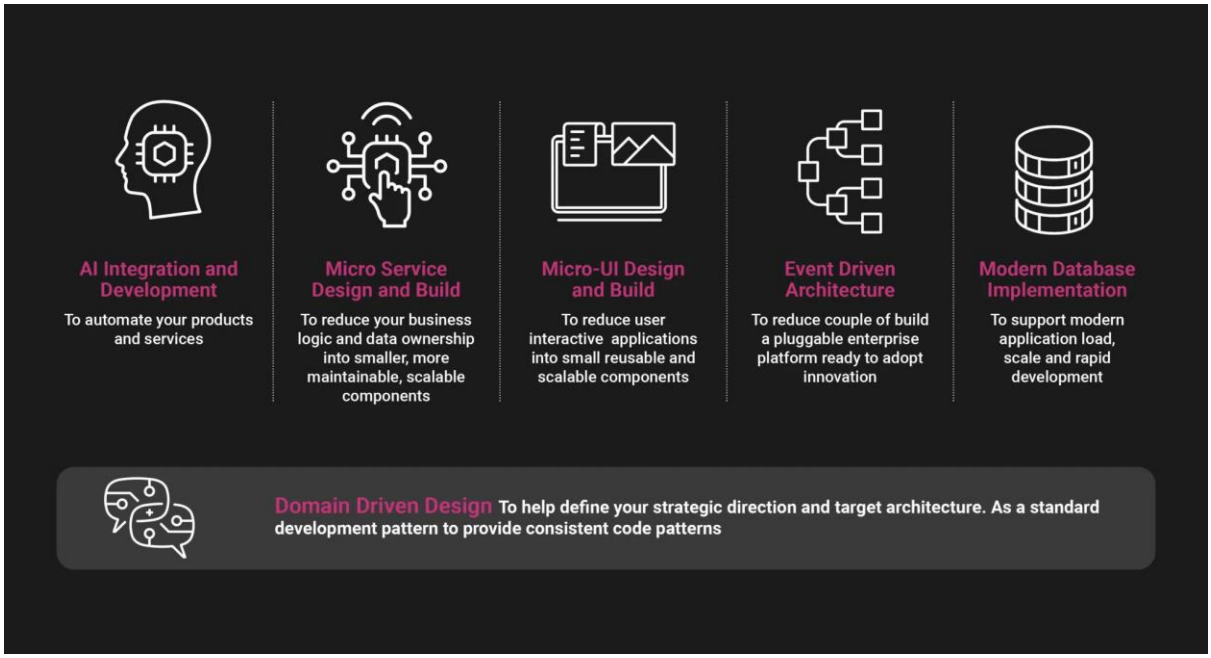
gravity9 understand the challenges of legacy systems and with our experience and expertise will, pave the way for your organization's digital revolution. We guide you through the labyrinth of legacy complexity, identifying inefficiencies, bottlenecks, and opportunities to innovate.

By strategically modernizing and optimizing your systems, we streamline operations, reduce technical debt, and empower your organization to thrive in the digital age. Our approach goes beyond mere



modernization; we prioritize future-proofing your architecture with an emphasis on AI integration and product insulation, ensuring it's scalable and adaptable to evolving technologies and market demands. Through meticulous planning and implementation, we transition your organization from legacy constraints to agile, best-practice solutions.

CORE TO OUR APPROACH



AI

Harness AI to revolutionize operational efficiency and decision-making. Our expertise in AI development empowers organizations to innovate and gain a competitive edge, optimizing performance and profitability through tailored, intelligent system integration.

Engineering

Modernize your applications with confidence and precision. Our expert team specializes in seamlessly transitioning legacy systems to agile, future-proof solutions, ensuring your business stays ahead in today's fast-paced digital landscape.

Product

We are constantly inventing new digital products, services, and revenue streams for our clients by designing, prototyping and building experiences for the next market leaders. We research and define customer journeys by thinking human first to enable technologies fullest potential and build better products.

Building Better Digital Products



Global Presence

Highlighting our global presence, gravity9 has teams located in multiple offices worldwide, bringing a wealth of benefits. This international footprint allows us to tap into a diverse talent pool, ensuring we have the right expertise for any challenge. It also enables us to offer round-the-clock development and support, thanks to the different time zones our teams operate in. Furthermore, our global perspective enriches our understanding of various markets and cultures, which is invaluable in crafting digital solutions that resonate worldwide. Ultimately, our widespread teams enhance our agility, foster innovation, and ensure we can meet our clients' needs with unparalleled efficiency and effectiveness.

WE ARE GLOBAL

Our Locations

UK & IRELAND

London
Birmingham
Dublin

POLAND

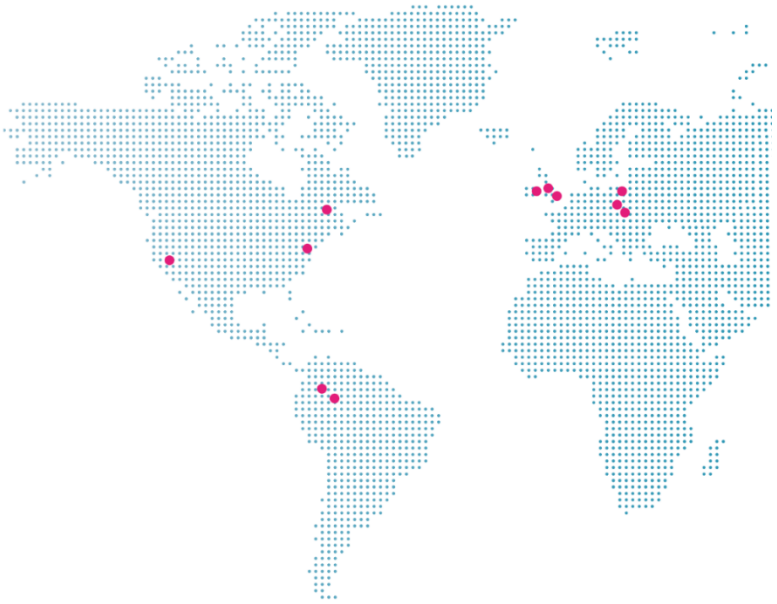
Kraków
Wroclaw
Gdansk

USA

New York City
North Carolina
California

COLOMBIA

Medellin
Bogota



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Service Description

In today's world, more emphasis is placed on stable and secure software development. This results in the development operations becoming essential parts and guaranteeing a stable release strategy and continuity in the process.

gravity9 offers complex DevOps services for our clients. Based on the Agile approach to software development, our skilled DevOps Engineers focus on increasing software speed, efficiency, and delivery. Due to experience in diverse environments and proficiency with cloud providers such as Azure, AWS, and GCP, using tools such as Kubernetes, Terraform, Helm, Flux, and Azure DevOps, we're able to provide bespoke consultation for each client.

We understand that DevOps is not a one-size-fits-all solution; therefore, we tailor a DevOps plan that fits your business needs and goals. Thanks to experience in sectors ranging from Telecom to Life Insurance, MDM to e-commerce, and beyond, our DevOps Engineers can help you outline your team's current maturity level and identify a road map of improvement areas. They can propose the best tools for your needs at every step of the DevOps lifecycle. Also, they can help you with applying the DevOps principles and practices to your project - help you set up the DevOps environment, configure the tools, train the teams, and monitor the progress.

One of our DevOps services helps our clients implement the DevOps lifecycle in their software development process. Introducing this cycle helps teams develop and stabilize work environments by reducing the risk of errors and failures by implementing continuous testing, monitoring, and feedback loops. It also brings faster deployments, enabling automating and streamlining the software delivery process, resulting in more frequent and consistent releases. It also fosters a culture of shared responsibility, transparency, and faster feedback among development and operations teams.

Establishing a continuous integration/continuous delivery (CI/CD) pipeline is mandatory in the DevOps lifecycle. CI allows software developers to merge their changes to the app continuously and effortlessly into a common repository. The following improvement introduces the CD part - deploying solutions to live environments. Due to the automation and continuity of these pipelines, our clients can expect an improvement in the speed, stability, and quality of the software development process.

One of the key features of the CD process is automated testing. It's necessary at every development stage to ensure product quality. From a DevOps standpoint, it's most beneficial to make it as accurate and timesaving as possible; hence, clients are advised to introduce tools for automated testing to have quick bug detection and accuracy of results.

From our team experience, we can conclude that automation is the most efficient way to improve the Software Development Life Cycle (SDLC). Starting with the previously mentioned test automation, we're trying to help our clients by automating configuration, deployment, and orchestration tasks.

The DevOps team at gravity9 helps clients move forward from old ways of provisioning environments, mainly manual work, and switch to Infrastructure as Code (IaC). It is a practice of defining, provisioning, and making configuration changes in infrastructure resources (such as servers, networks, storage, etc.) needed to run applications using code or configuration files. IaC helps developers and operations teams automate and standardize the infrastructure setup, configuration, and management.

We can streamline the software deployment process across multiple servers, making it efficient and reliable.



To improve our clients' SDLC even more, we can combine previous tasks and others under complex orchestration workflows to reduce manual input and increase savings in both time and costs.

gravity9 also offers containerization and container orchestration services for clients.

It is a process of packaging software applications and their dependencies into isolated, lightweight, and portable units called containers. Containers allow developers to run applications consistently across different environments: development, testing, and production. It also simplifies and accelerates the process of delivering and deploying software regardless of infrastructure.

Container orchestration facilitates managing the lifecycle, deployment, scaling, and networking of multiple containers across clusters of servers. Container orchestration helps operations teams automate and optimize containerized applications' performance, availability, and security. To achieve these goals, our DevOps team also uses GitOps. It's a methodology that applies the principles of Git version control to managing Kubernetes clusters. GitOps helps synchronize the cluster's desired state with the actual state by using Git as the single source of truth.

Our other offering is cloud migration. Most engagements begin by thoroughly assessing the client's current infrastructure, applications, and workloads. This assessment helps identify the readiness for cloud migration, existing dependencies, and potential challenges. We strongly emphasize collaboration and communication throughout the advisory process. Our team will work hand-in-hand with clients' stakeholders, ensuring that everyone is aligned and that the architecture reflects the collective vision of your organization. This collaborative approach is critical to creating a comprehensive migration strategy based on the assessment.

The next step is to select the most suitable cloud platform. Our teams' experience allows us to advise our customers based on the previous assessment and other factors, i.e. budget and technical considerations, which service provider is most suitable for them. We aim to bring operational improvements, leading to increased efficiency and productivity. We also take into consideration the plans of our clients. Our experience allows us to provide recommendations that address potential future technical needs.

We're preparing a detailed migration plan to provide our customers with a seamless cloud transition. It includes identifying the best possible migration waves or phases based on business value and implementation effort. Thanks to establishing migration priorities, we can recommend the best migration methods for each workload, i.e., lift-and-shift, re-platforming, re-architecting, etc.

At gravity9, we believe DevOps is not a one-time project or a final destination. It is a continuous learning and improvement journey that requires experimentation, adaptation, and innovation. Our DevOps team always seeks new ways to optimize processes, tools, and practices to deliver better customer value.

Automation is the key to achieving speed, consistency, and reliability in DevOps. It helps reduce manual errors, save time and resources, and increase productivity and efficiency. Automation can be applied to various aspects of DevOps, such as infrastructure provisioning, configuration management, testing, deployment, monitoring, and feedback.

Monitoring and observability are also essential for ensuring the performance, availability, and security of software applications in production. Monitoring helps track the health and status of the system using metrics, logs, alerts, and dashboards. Observability helps understand the behaviour and performance of the system using traces, events, and context.



Key Features and benefits:

- Continuous Integration/Continuous Deployment (CI/CD) Pipeline: The service offers a robust CI/CD pipeline that automates the build, test, and deployment processes, ensuring rapid and reliable delivery of code changes.
- Automated Testing: It supports various types of automated testing, including unit tests, integration tests, and end-to-end tests, helping teams maintain code quality and reliability.
- Configuration Management: The service offers robust configuration management capabilities, allowing teams to effectively manage and version control application configurations across different environments.
- Infrastructure as Code (IaC): It enables users to manage and provision infrastructure using code, promoting consistency, scalability, and version control of infrastructure configurations.
- Monitoring and Logging: The service includes comprehensive monitoring and logging capabilities, allowing teams to track application performance, detect issues, and troubleshoot effectively in real-time.
- Containerization: The service seamlessly integrates containerization technologies like Docker and Kubernetes, enabling easy deployment and management of containerized applications across different environments.
- Scalability and High Availability: It offers features for automatic scaling and high availability, ensuring applications can handle varying workloads and maintain uptime during traffic spikes or hardware failures.
- DevOps migration: Set desired state and goals, plan the roadmap and phases, identify critical assets, results with enhanced quality and reliability, better transparency of SDLC, optimize cost by scalability, improve security
- Extensibility and Integration: It supports integration with a wide range of third-party tools and services through APIs and plugins, enabling teams to customize and extend the functionality of the DevOps pipeline according to their specific requirements.



Case Studies

Major Healthcare Provider

A major healthcare trust required a brand-new system designed and built to address critical issues with their existing process and better serve their needs in the medical technology space (the previous approach was inefficient, potentially inaccurate, and difficult to maintain or scale). Specifically, the client required a way for care providers to review medical technology products for suitability and to communicate with suppliers who needed an efficient way to provide up-to-date product information in relevant formats.

gravity9 won the project tender process, transforming the experience and delivering the "Technology Adoption Platform" by designing and building a highly scalable web-based solution with the potential to serve the entire healthcare provider. After initial conversations, the project began with executive team discovery meetings to map what is "truly" needed, followed by iterative event storming to ensure the product meets stakeholders' needs.

Built around MongoDB, Azure, React and Java, it reduces maintenance workloads, provides a clear communication channel, and enables storing relevant and accurate product information.

Utilised Technology Stack

- Cloud: Azure, Azure AD B2C, Terraform
- Database: MongoDB Atlas
- Backend: Java, Spring Boot
- Frontend: React, NextJS, MUI component

Employee Wellbeing Provider

Our client provides technical employee wellbeing solutions for physical, mental, and financial health. The client approached gravity9 and spoke with Founder Noel Ady to discuss a new module to their existing Mental Health solution that would enable communication between domain microservices and CRM (Customer Relationship Management) in a multicloud environment. Additionally, we would provide additional security, improve system performance, and provide domain separation.

The initial solution uncovered additional requirements, which gravity9 designed and built into the second iteration before conducting a final optimisation pass to streamline further, displaying an evolutionary architecture approach. The client was delighted with the overall result, especially gravity9's ability to adapt and implement event-driven architecture.

gravity9 achieved a remarkable outcome that met all the client's expectations, demonstrating expertise in designing and deploying event-driven architecture and delivering a solution that supports asynchronous communication and facilitates evolutionary changes in response to the dynamic business environment.

Utilised Technology Stack

- Cloud: Multi-Cloud
- QA: SpecFlow, Living Documentation
- Development: .NET Core

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National Defence Organisational

A major defence organisation sought to reform how they generate useful analytics for gauging and reacting to public opinion to NATO operations in specific geographic areas. Their previous approach was to research and generate reports manually, which was resource-intensive, delay-prone, and at risk of accuracy issues. Partnering with MongoDB, gravity9 scoped, developed, and delivered a replacement cloud-based system over a three-week period.

The delivered system can collate data from multiple sources, allowing easy, customisable generation of data-rich reports based on up-to-date information plotted against any number of data points, including GIS. Built around React.js, Node.js, MongoDB, and Microsoft Azure, this system has reduced resource overheads and enabled rapid delivery of relevant and accurate information to decision-makers within the organisation. Resource and actual costs have also been reduced as a result.

Utilised Technology Stack

- Cloud: Microsoft Azure
- Database: MongoDB
- Backend: Node.js
- Frontend: React.js

Beauty & Pharmaceutical Retailer

As part of a fast-track ideation and rapid-build development project, gravity9 partnered with MongoDB to help a popular health and beauty retailer and pharmacy build a new Beauty Concierge application to increase customer loyalty and encourage repeat business in the retail domain. Prior to gravity9's involvement, no history of customer consultations or recommendations was stored, meaning returning customers would have to "start over" be re-interviewed, providing them no advantage at this vendor versus their competitors. The client outlined the project requirements, providing a starting point for a more profound consultation process in which gravity9 challenged, revised, and reached a consensus on the form and shape of the project.

A web-based solution was created, tailoring the customer experience via an accessible in-store app. The app maintains customer profiles and preferences allowing consultants to access this information as well as sales logs and KPI's, creating a more personalised, bespoke service unique to the client. The product is built with a .NET Core backend, Angular frontend, and MongoDB database.

The solution has been delivered to the client and initial reception has been extremely positive, with scope for additional functionality, integration, and quality-of-life improvements to be added later. Customers can enjoy a more intimate shopping experience which encourages trust, brand loyalty, repeat business, and increased footfall versus competitors.

Utilised Technology Stack

- Cloud: Microsoft Azure
- Database: MongoDB
- Backend: .NET Core
- Frontend: React



Enquiries

For enquiries, please contact:

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