



Delivering Continuous Innovation: Thousands of Releases a Year with Zero Downtime

Welcome to our presentation on how we manage extraordinary productivity in software development with a small team. We'll share insights into our unique approach that enables us to deliver thousands of releases annually without any downtime.

This second edition explores our methods for optimizing productivity and lifecycle value creation in software development, covering topics from distributed teams to innovative tooling for NoOps organizations.

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Agenda Overview

Premises and Achievements

Exploring our foundational principles and how we achieve our goals

Context and Scope

Understanding our work for customers and development processes

Unique Approaches

Examining what sets us apart from others in the industry

Key Differences

Diving deeper into our controversial yet effective methods

Our Mission and Vision

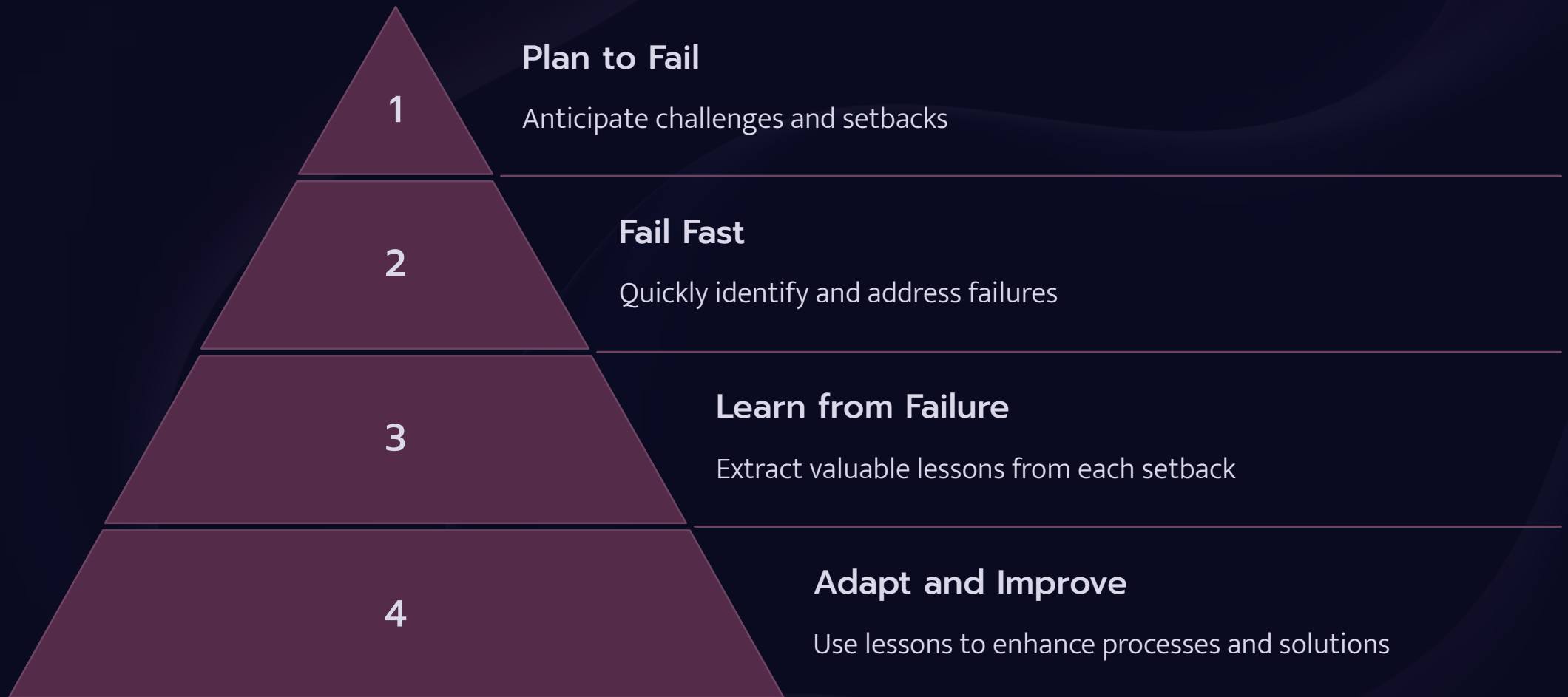
Strong Dedication

Moving at speed outside the beaten tracks requires a very strong dedication and sense of direction to succeed. A strong vision and autonomy are key to our approach.

Skilled Team

We employ the best and maintain a balance between developers who excel in developing new technology, customer/solution development experts, and tooling/automation/infrastructure/software factory experts.

Embracing Failure for Growth



We believe that lessons learned from failing are the best kind of learning. By embracing failure as part of the process, we can iterate faster and achieve better results in the long run.



Our Core Services



Bespoke Software Development

Building custom software solutions tailored to specific business needs



Cloud-Native Solutions

Developing and deploying scalable applications on cloud platforms



Maintenance and Operations

Providing ongoing support and optimization for deployed solutions

Our Expertise

24/7 Always "On" Systems

Developing systems with no downtime or service windows

Fast Market Adaptation

Enabling continuous releases multiple times per day

Rapid Scaling

Handling 10x traffic increases within hours or days

Cybersecurity Focus

Keeping customers and users safe from evolving cyber threats



Pushing the Boundaries

Optimized for Innovation

We're a company optimized to push and show what's really possible in bespoke software development & lifecycle management. Our focus is on demonstrating the full potential of custom software solutions.

Last Mile Mentality

We maintain a last mile mentality, ensuring that every aspect of our solutions is refined and perfected. This approach allows us to deliver exceptional value to our customers.



Our Team Dynamics

Highly Motivated

We work as a highly motivated team, driven by passion for innovation and excellence.

Cross-Functional

Our team operates across customers, users, codebases, and time zones, ensuring comprehensive expertise.

Domain Mastery

We push ourselves in mastering the customer's domain, actively engaging to reach new heights in our combined journey.



Technical Challenges We Love



Performance

Optimizing systems for maximum efficiency and speed



Scalability

Building solutions that can grow with demand



Security

Implementing robust security measures and encryption



Complexity

Solving intricate technical challenges

Our Partnership Approach

Customer-Driven Goals

Our customers know and decide WHAT needs to be done. We know and decide HOW to achieve those goals. This clear division of responsibilities ensures that we leverage our technical expertise while aligning with the customer's business objectives.

Tight Integration

We work very closely with our customers to build respect and understanding. We identify ourselves as the customer's own IT development and operations department, fostering a seamless integration between our team and the client's organization.

Measuring Our Success

Customer Success

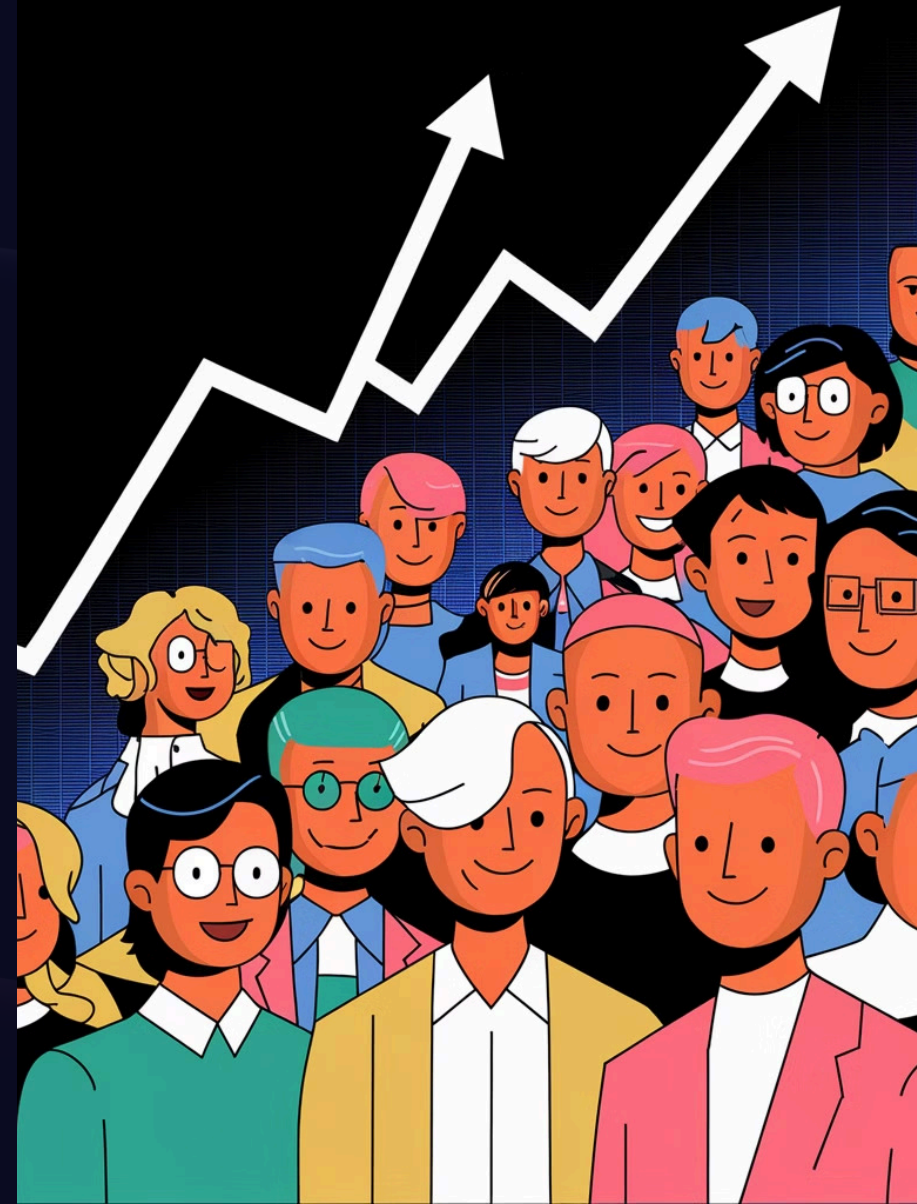
We're only successful WHEN the customer is successful. Our goals are intrinsically tied to our clients' achievements.

Investment Mindset

We treat the customer's investment as our own hobby (investment), ensuring a deep commitment to the project's success.

Continuous Improvement

We constantly evaluate our performance and seek ways to enhance our processes and deliverables.



Key Performance Indicators

5-20

Minutes MTTR

Mean Time to Resolve for >90% of issues, often before customer notification

5+

Years MTBF

Mean Time Between Failures, though this metric is less relevant for growing software solutions

20K-100K

LoC/Dev/Year

Lines of Code per Developer per Year, indicating high productivity





Our Unique Approach



24x7 Distributed Organization

Actively distributed across most time zones for continuous operations



Cloud-Native & Microservice Default

Building scalable, modular solutions from the ground up



Pushing Technological Limits

Employing top talent to innovate and overcome challenges



Custom Tooling Investment

Building our own libraries, technology, and tools to boost efficiency

Rethinking "Best Practices"

Challenging Conventions

We've experienced the pitfalls and consequences of many common practices in the industry. Our approach involves critically examining these "best practices" and adapting or replacing them when necessary.

Continuous Improvement

Instead of blindly following industry standards, we continuously evaluate and improve our methods. This allows us to deliver better results for our customers and stay ahead of the curve in software development.



Customer Interaction Process

1

Hypothesis-Driven Development

We employ a unique "hypothesis-driven explorative development process" to keep costs low and speed up development.

2

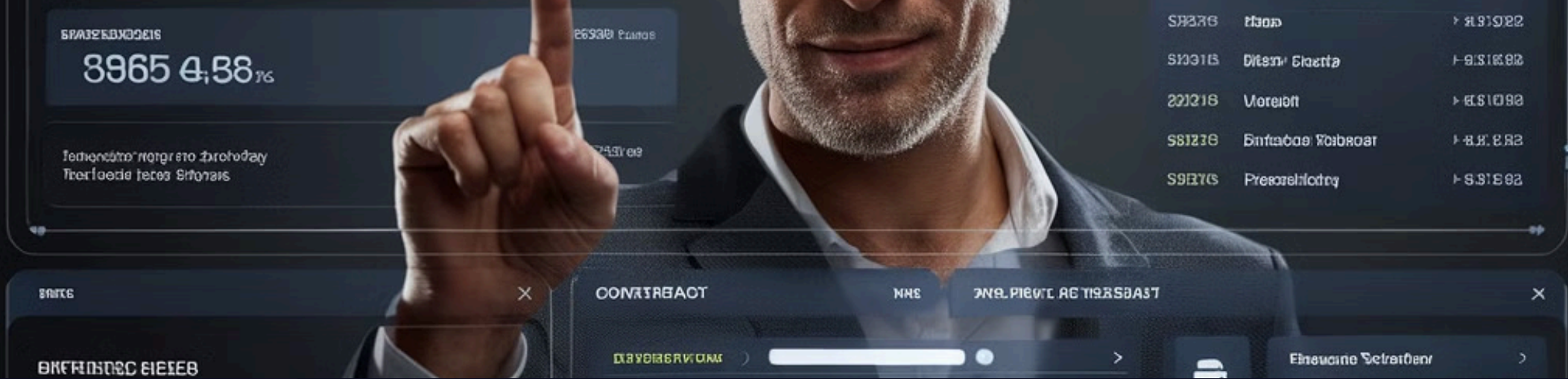
Comprehensive Questioning

By asking questions about the full process/system, we ensure developers get the right answers they need for good, working solutions as early as possible.

3

Flexible Approach

We adapt our process when we or the customer know the domain very well, or if the customer needs a special approach for any reason.



Rapid Development Success Story

"With the Contract Self-Administration for proptech and Velocity PCBA logistics, eXOReaction delivered a fully end-to-end production system in the time most just have created a requirement specification and some mockups."

This testimonial highlights our ability to rapidly develop and deploy complete systems, outpacing traditional development timelines and delivering tangible value to our clients much faster.

Proactive Communication Strategy

Live Push-Based Sharing

We ensure customers can answer questions from their management, board, or own customers through async sharing.

Anticipatory Updates

Our goal: "The customer knows the answer before anyone asks the question."

Monthly Priority Reports

We provide our perspective on functionality and technical priorities, which the customer can adjust.



Always-On Customer Support

24/7 Availability

We maintain an "Always on" approach for our customers, recognizing that their success is our livelihood. This commitment ensures that we're ready to assist at any time, day or night.

Last Mile Mentality

Our team adopts a last mile mentality, going above and beyond to ensure every aspect of our service meets and exceeds customer expectations. This approach helps us build long-lasting partnerships and drive mutual success.

Controversial Yet Effective Practices



Natively Distributed Team

Actively working across all time zones



Social Coding

Branches and PRs are mostly considered waste



Microservices

We grow software rather than building monoliths



NoOps

Automating operations to focus on development





Distributed Team Dynamics

Async Communication

We prioritize text over voice/video to keep information accessible to everyone. This approach supports developer-time rather than manager-time.

24/7 Expert Availability

Our distributed team ensures that experts are at work almost around the clock, making operations nearly free and automated.

Chained Timezone Development

When it makes sense, we leverage our global presence for continuous development across time zones.

Social Coding Approach

1

Continuous Small Commits

We grow software through tiny, frequent commits, making it easier for the team to understand and follow the codebase growth.

2

Trunk-Based Development

Our social coding and continuous production approach ensures everything is solid for release to production at any time.

3

Explicit Logic

We prioritize explicit logic over "smart|compact" code to reduce confusion and minimize side effects in production changes.

4

Open Source by Default

We use ASL v2 licensing to enable good, lawyer-free use and re-use of code for us and our customers, avoiding lock-ins.



Microservices: Growing Software

Multiple Small Codebases

We maintain 300-500 active codebases, allowing for faster onboarding and easier maintenance.

Early Environment Testing

We get environments up and running as early as possible for thorough testing and verification.

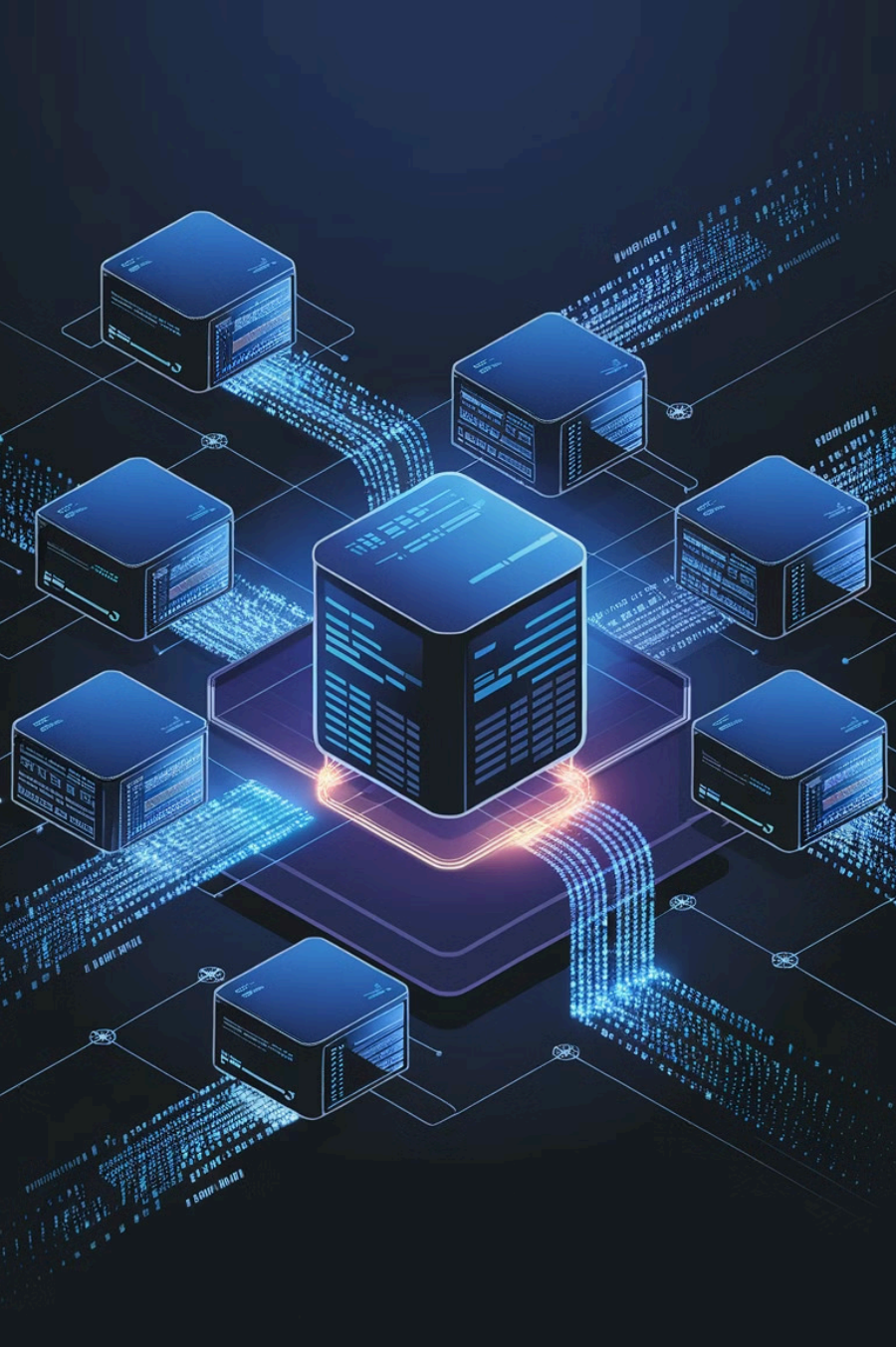
Code Reusability

We use typelibs and SDKs to maximize code reuse across solutions and customers.

High Availability Focus

Our SLAs are in the "many nines," leveraging shared state for performance and reliance.





Proprietary Development Frameworks

XORcery

Our framework for growing from an event-sourced monolith to async microservices, enabling scalable and flexible architectures.

Stingray/Messi

Custom building blocks for more traditional microservice software stacks, optimized for active lifecycle deployments.

NoOps: Minimizing Operational Overhead



Simplified Infrastructure

No Kubernetes/Istio unless absolutely necessary



Version-Controlled Environments

Semantic version controlled, pull-based deployments



Continuous Patching

Automated updates for OS, dependencies, and software



Production Testing

Side-by-side testing of new releases in production



Homegrown Tooling for Efficiency

Necessity-Driven Innovation

Most existing tooling for 24x7 continuous production is built by technology giants and is too expensive for smaller companies. This necessitated the development of our own tools like buri, nerthus, stingray, messi, and xorcery.

Software Growth Optimization

To support our approach of growing software, we've created specialized tools such as visuelle, nerthus, buri, wamper, http-loadtest, and various baselines and BaseCommands.



Open Source Contributions

Community Engagement

We encourage others to use and extend our tools to support their needs.

Collaborative Improvement

By sharing our tools, we believe we can collectively make everything better in the software development ecosystem.

Continuous Innovation

Our open-source approach drives ongoing refinement and adaptation of our tools to meet evolving industry needs.



Specialized NoOps Tooling



Custom NoOps Tools

nerthus, buri, vili, pull-based semantic-updates



Optimized Libraries

stingray, property-*, jau/configservice



Security-Focused Tools

Continuous CVE-patching with stingray, nerthus, buri

Get Started with Our Approach

1

Explore Open Source Tools

Check out the Cantara organization on GitHub

2

Immersive Team Experience

Consider a 6-12 month engagement with eXOReaction

3

Customized Workshops

Ægis offers tailored consulting and workshops

These steps can help you begin implementing our innovative approaches in your own organization, leading to improved productivity and software development practices.

Embracing the Future of Software Development

As we conclude, remember that our approach to delivering continuous innovation with thousands of releases a year and zero downtime is not just about technology – it's about a mindset shift. By embracing distributed teams, social coding, microservices, and NoOps, we've redefined what's possible in software development.

We encourage you to explore our methods, try our open-source tools, and consider how these practices might transform your own development processes. The future of software development is here, and it's more agile, efficient, and innovative than ever before.

