My Approach to Architecture

As a child, I once took apart my mother's VCR. I wanted to understand how it worked, but instead I was greeted by a bewildering collection of wires and circuit boards that refused to explain themselves. It was frustrating, but also fascinating.

Looking back, I realize that experience shaped much of my career. Ever since, I've been driven by a desire to make complex things understandable.

That curiosity has carried me from the mainframe era to today's cloud-native and enterprise-scale ecosystems, and from developer to architect, mentor and trusted advisor. While technologies and paradigms have evolved, my motivation has remained unchanged: bringing clarity out of complexity.

Along the way, I've come to realize that architecture is not primarily about technologies. It is about people and human nature. About understanding how organizations work, what drives their decisions and where they derive value.

My role is not to impose my own agenda, but to understand what matters and help organizations navigate the path forward.

I still enjoy technology and remain endlessly curious. Like most of us, I've occasionally been captivated by elegant solutions and exciting new technologies. Experience, however, has taught me something important:

Architecture exists to serve the organization, not the architect.

Businesses invest in technology to create value, manage risk and enable change. Sometimes the right answer is a new technology. Sometimes the right answer is "no". Novelty and sophistication are poor goals in themselves.

I believe the best architectures are rarely the most sophisticated ones. They are the pragmatic ones—the ones that deliver on the organization's goals while respecting its constraints.

Throughout my career, I have worked in environments where failure has real consequences: payment systems, healthcare platforms, public transportation, identity management, critical national infrastructure and other highly regulated industries. I have designed architectures, mentored developers, advised leadership and helped organizations navigate technological and organizational change.

That same pursuit of understanding ultimately led me to create my own enterprise architecture platform—not because the world needed another diagramming tool, but because I wanted to answer a simple question:

"If this component fails, what does it mean for the business?"

Experience has taught me that being right is far less important than helping the organization succeed. Some of the best solutions I've been part of were not my ideas, and I believe architecture works best when it enables people rather than constrains them.

Despite more than three decades in the industry, I remain convinced that there are far more things I do not know than things I do. Curiosity, humility and a willingness to keep learning continue to drive me today.



JESSIE WADMAN

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Senior Architect • Technical Leader • Trusted Advisor

Bringing clarity out of complexity

TECHNICAL BREADTH

AI-ASSISTED DEVELOPMENT AND AUTOMATION

CLOUD PLATFORMS AND DISTRIBUTED SYSTEMS

EVENT-DRIVEN AND DATA-CENTRIC ARCHITECTURES

INTEGRATION AND INFORMATION ARCHITECTURE

SECURITY, PRIVACY AND REGULATORY COMPLIANCE

MODERN APPLICATION DEVELOPMENT AND DEVOPS

CAREER HIGHLIGHTS

30 YEARS SOFTWARE DEVELOPMENT

16 YEARS ARCHITECTURE AND TECHNICAL LEADERSHIP

FOUNDER DEPENDRA

SOLUTION ARCHITECT VR SVERIGE AB

CLOUD ARCHITECT SCANIA AB

CLOUD ARCHITECT CAMANIO AB

CHIEF ARCHITECT MODUL-SYSTEM SWEDEN AB

DOMAINS

13 years with **public transport**

10 years in **payment industry**

5 years in **health care**

15 years in regulated industries with **PCI-DSS**, **ISO-27001** and **NIS2**

6 years in **point of sale industry**

2 years **AS/400 mainframe**

WHAT I BRING

Leadership & Influence

* Technical leadership and mentoring
* Guiding teams and organizations through change
* Communication across technical and business domains

Architecture

* Enterprise and solution architecture
* Integration and information architecture
* Cloud and distributed platforms
* Security, risk and compliance

Approach

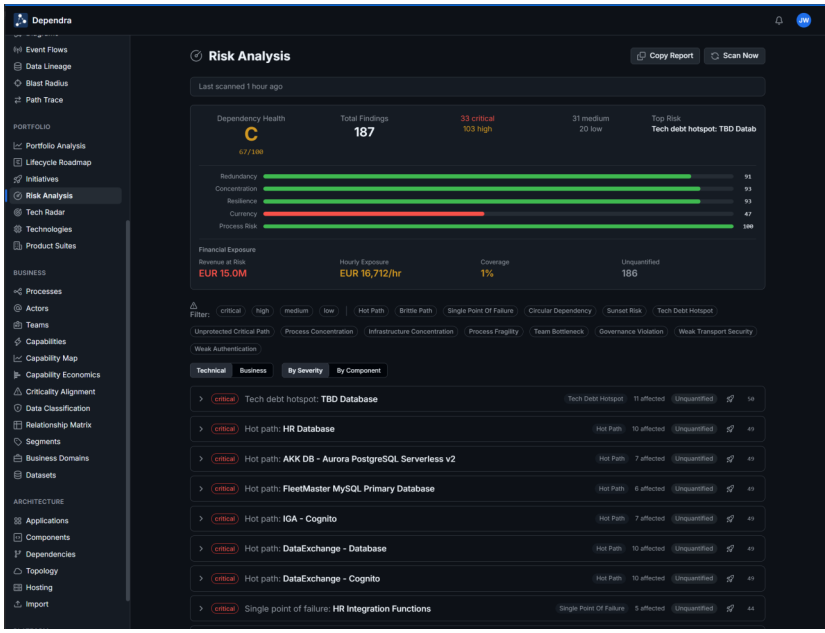
* Translating complexity into understanding
* Pragmatic decision making
* Business-first perspective
* Clear communication

SELECTED PROJECTS

DEPENDRA

Developed a model-first enterprise architecture and business impact intelligence platform focused on visualizing business consequences, risk concentrations and dependency chains.

Existing monitoring tools tell you when something is broken. Dependra helps people understand what that means for the business.





VR SVERIGE

SOLUTION ARCHITECT (3 YEARS)
HTTPS://WWW.VRSVERIGE.COM

- Designed and implemented an enterprise-grade AWS environment, significantly improving security posture and facilitating both **ISO-27001** and **NIS2** compliance.
- Reduced cloud spending by **4.8MSEK / year**.
- Designed and implemented an integration architecture and strategy, used for all mission-critical integrations, reducing effort and licensing costs by **58%**.
- Designed and led the development of an Enterprise Information Model data platform, mitigating vendor lock-in and reducing exit cost projections by **~70%**.
- Designed and led the development of an IAM platform, reducing manual effort by **~80%** and facilitating ISO-27001 and NIS2 compliance.
- Mentored developers and acted as a technical sounding board across the organization.
- Partnered with IT leadership to shape architecture and technology strategy across a portfolio of **60+** applications.
- Worked closely with leadership to transform contractual requirements into practical and sustainable technical strategies, helping ensure successful delivery across contracts exceeding **SEK 8Bn**.
- Worked closely with leadership to contribute and validate requirements for several procurement initiatives.

SELECTED PROJECTS



SCANIA

CLOUD ARCHITECT AND LEAD DEVELOPER (4 YEARS)
HTTPS://WWW.SCANIA.SE

"Cloud architect and lead developer on a global integration platform for HR."

Successfully designed, implemented and deployed a modern, cloud-based integration platform and data hub for employee- and compensation information, which was key for VW's world-wide rollout of SuccessFactors.

> *The solution runs in AWS on Kubernetes, AWS AppSync (GraphQL), S3, SFTP, DynamoDB, Microsoft SQL Server with complex row-level-security, and dynamic schema generation, as well as other AWS centric structures to ingest, process, store and expose information from various on-premise and legacy systems, in a modern, consistent and structured manner. C#, dotnet*

Some of the highlights of the project:

- It pioneered both Kubernetes and CDK within the organisation, with follow up knowledge sharing with other departments and development units.
- Started early in the project while requirements were a moving target, working closely with their enterprise architect and department heads to design a durable, resilient and cost-effective architecture.



TRANSDEV

CLOUD ARCHITECT AND CLOUD ENGINEER
HTTPS://WWW.TRANSDEV.SE

"Cloud architect on a modern platform for connected vehicles in public transport"

Transdev's busses have a wealth of near real-time telemetry that is published to their cloud solution. The contract started with migration of their existing solution from Azure to AWS, where vehicle position data was being sent in near-real-time to the national traffic agency. Realizing the untapped potential of the information, the contract continued with establishing a data lake and a query layer to provide a basis for reporting and real-time analysis, thus providing them with intelligent information that can drive business decisions. This continued into a real-time front-end for monitoring and visualization of that real-time information.

- AWS CDK, AWS IoT, Kubernetes, GraphQL, Kinesis, Timestream, S3, Redshift, Athena, Glue, ETL, SFTP, QuickSight, Lambda, SQS, CloudWatch, and more.

SELECTED PROJECTS



CAMANIO, SMARTCARE

CLOUD ARCHITECT AND LEAD DEVELOPER (5 YEARS)
HTTPS://WWW.CAMANIO.COM

“Cloud architect and lead developer on a near real-time alarm and incident platform for medical care givers”

Successfully designed and worked on several generations of a multi tenant, highly scalable, highly available and high performant, state of the art IoT based alarm and incident platform for medical care givers, supporting alarming with both mobile and stationary care alarms, remote video monitoring of patients, as well as online patient meetings. The solution is hosted in Kubernetes running in Microsoft Azure.

The solution is—at its core—a near-real-time pluggable integration pipeline that ingests signals from a multitude of devices from different vendors, interprets them dynamically based on a rule engine, and then generates alarms as appropriate which are routed either to external alarm centrals (such as SOS AB) or to an internal incident responder app, complete with incident escalations, journaling and more.

Some of the highlights of the project:

- Started early in the project by building the first prototype, and stayed on through three major generations of the solution as the client continuously adapted to the rapidly changing industry landscape, consolidated the vision for their business and invested in additional features.
- Designed a robust, resilient and fault tolerant architecture that ensures that patient alarms, notifications and other critical messages reach their intended destinations.
- Designed and implemented a multi-tenancy approach that conforms with regulatory requirements for sensitive information, including “bring-your-own-encryption-key”.
- Introduced both the **event sourcing** and the **actor model** patterns to facilitate a highly available, event-driven, distributed computing solution capable of ingesting, routing and processing messages at cloud-scale in a stateful manner (as opposed to stateless), where performance and message ordering are critical.
- Designed and prototyped an **embedded IoT device** from the ground up, to integrate with on-site fire alarms. From embedded C++ coding and soldering the first prototype to designing and 3D printing the casing.
- Worked closely on many integrations, both with IoT devices, as well as external systems, including the various services from SOS AB.

A thoroughly and genuinely exciting project, where the mission of “making the world a better place” was not just a tagline, but directly and quantitatively measurable.

SELECTED POSITION



MODUL-SYSTEM SWEDEN AB

CHIEF ARCHITECT

HTTPS://WWW.MODULSYSTEM.SE

"Responsible for technical leadership, strategy and technology choices. Architecting and coding enterprise systems."

In addition to technical leadership, mentoring and talent development, I was responsible for conceptual design, architecture and implementation of many of the company's flagship projects, including *SJ Regional*; a public procurement project for self-service kiosks for the Swedish regional train system. SJ's customers are travellers that use contactless (NFC) cards to store tickets and funds. In these kiosks they can - among other things - top up funds, purchase tickets and periodic access to the railway systems. The solution consists of hundreds of Windows Embedded machines with EMV terminals and a touch-only user experience. The kiosks have a highly resilient synchronization process with a central system for transactions and anti-fraud mechanisms. We also pioneered contactless payments and many other technologies as they emerged onto the Swedish market.

Some of the highlights of my role:

- Initiated and managed the company's Microsoft Partnership, thereby reducing licensing costs by approximately 500K SEK per year.
- Tasked with documenting, following up on, and improving the developers' competencies. I achieved this by holding regular seminars and lectures as well as pushing and coaching individuals for Microsoft certifications, thus allowing the company to maintain its Microsoft partnership and improving the overall level of knowledge and skill.
- Introduced *Team Foundation Server* and *Application Lifecycle Management*, giving project managers and development teams the necessary tools to monitor vital KPIs, improve overall structure and provide customers with more accurate feedback and estimates.
- Facilitated the transition from *waterfall* to *agile* project philosophy and methodology with a higher release cadence, improving customer satisfaction and reducing the overall cost of managing and adapting to changes in requirements.
- Introduced *unit testing*, *automated tests* and *continuous integration*, thereby significantly increasing the quality level and reducing the maintenance costs, as well as decreasing the time-to-market.
- Helped facilitate ISO and PCI-DSS (Payment Card Industry Data Security Standard) compliance by designing, documenting and implementing parts of the company-wide policies, processes and procedures required for the compliance. These included the *secure coding standard, code review process*, *threat modelling* process, *risk assessment* process, and many more, based on industry standards such as OWASP and CVSS. Also tasked with holding annual lectures on secure coding, in accordance with PCI-DSS requirements and industry best practices.
- Managed a software outsourcing team for a key project.
- Facilitated the migration of key business services to the cloud, including Office 365 and Visual Studio Team Systems.
- Designed and implemented the company's first cloud based payment processing system.
- Helped lead the outsourcing efforts of the company's *card holder data environment (PCI-DSS)* to a third party hosting provider, thus allowing the company to better focus on its core businesses and innovation.

I DID THIS! ...AND MORE



SL MOBILE UNITS FOR TICKET VALIDATION

MOBILE UNITS USED BY STOCKHOLM METRO TO VALIDATE NFC CARDS AND SYNCHRONIZE TRANSACTION DATA VIA CENTRAL SYSTEM TO THE CUSTOMER.

C#, WPF, ASP.NET MVC, SILVERLIGHT, NFC, EMV, MICROSOFT SQL SERVER

ARCHITECTURE & FRAMEWORK DESIGN, PROFILING AND OPTIMIZATION

MODUL-SYSTEM





SJ SELF SERVICE TICKET KIOSKS

DISTRIBUTED NETWORK OF TICKET SALES KIOSKS FOR PUBLIC TRANSPORTATION WITH EMV PAYMENT TERMINAL AND NFC TRAVELER CARDS.

C#, WPF, ASP.NET MVC, WINDOWS EMBEDDED, NFC, EMV, MICROSOFT SQL SERVER

ARCHITECTURE & FRAMEWORK DESIGN, PROFILING AND OPTIMIZATION

MODUL-SYSTEM

FLEXPARK

SYSTEM FOR PRE-PAID OR POST-PAID PARKING USED THROUGHOUT SCANDINAVIA

C#, AKKA.NET, DOCKER, LINUX, KUBERNETES, AZURE, MICROSERVICES, DEVOPS

ARCHITECTURE & CODING

MODUL-SYSTEM



PETROL PAY

A PAYMENT PROCESSING SYSTEM RUNNING IN AZURE

C#, AZURE, HYBRID-CLOUD, HSM, CRYPTOKI, PCI-DSS

ARCHITECTURE & CODING

MODUL-SYSTEM

EDUCATION

1993-1998 COMPUTER ENGINEERING
REYKJAVIK TECHNICAL COLLEGE, ICELAND
1996-1998 PSYCHOLOGY
HAMRAHLIÐ COLLEGE, REYKJAVIK, ICELAND
2007-2009 COGNITIVE BEHAVIORAL PSYCHOLOGY
CONTAR, STOCKHOLM, SWEDEN

TIMELINE

1995-1996 COMPUTER TEACHER
BASIC TEACHING POSITION AT A PRIVATE SCHOOL
DOS, WINDOWS, OFFICE
TÖLVUSKÓLINN HF, ICELAND

1996 COMPUTER VIRUS ANALYST
ADVANCED REVERSE ENGINEERING OF COMPUTER VIRUSES
TROJANS AND OTHER MALWARE
X86 ASSEMBLER & DEBUGGING
FRISK SOFTWARE INTERNATIONAL, ICELAND

1996-1998 SOFTWARE DEVELOPER
CLIENT/SERVER BASED PROGRAMMING AGAINST
AS/400 MAINFRAMES
WINDOWS BASED PROGRAMMING OF GOVERNMENT SYSTEMS
BORLAND DELPHI, AS/400, C400, RPG, TCP/IP, ORACLE
AKS HF, ICELAND

1998-1999 SOFTWARE DEVELOPER & TEAM LEAD
POINT OF SALES SYSTEMS & PAYMENT PROCESSING
HBI INTERNATIONAL, ICELAND

1999-2005 DEVELOPMENT MANAGER
ISV, WORKORDER AND WORKFLOW SYSTEMS
CO-FOUNDER AND MANAGER OF STARTUP COMPANY
DCVR, SWEDEN

2006-2007 FREELANCE CONSULATANT

2007-2008 DEVELOPMENT MANAGER
ISV, BUSINESS APPLICATIONS
SPEEDUP AB, SWEDEN

2008-2012 ADVISOR, DEVELOPMENT STRATEGIES
SPEEDUP AB, SWEDEN

2008–2017 CHIEF ARCHITECT
TICKETING AND PAYMENT SYSTEMS FOR PARKING AND
PUBLIC TRANSPORTATION
ARCHITECTURE, CODING AND COMPANY-WIDE
STRATEGIC RESPONSIBILITES
HIGHLY SECURED PCI DSS ENVIRONMENTS
C#, MSSQL, VISIO, PCI-DSS, PA-DSS, GDPR, ISO, VSTS, ALM, DEVOPS
MODUL-SYSTEM SWEDEN AB

2016– FREELANCE CONSULTANT
WADMAN INFORMATION TECHNOLOGIES AB

Thank you for reading.
I look forward to hearing from you.