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A pioneering technology leader, empathetic software development manager and experienced software architect with a track record in making ground-breaking, business-driven transformations leveraging Big Data, APIs and low latency messaging technologies. Through pragmatic and bold decisions, makes high impact change flourish by unifying people and cutting-edge technology.

Eleven years leading globally distributed platform development teams, reinforced by a decade of back-end development within the financial services industry. Expert in delivering and managing pervasive global data platforms supporting C++, C# / .NET, Python, Java and Scala application development. Healthy knowledge of both technical and business requirements whilst minimising risk and maximising delivery particularly in the integration of legacy and cutting-edge technologies.

PROFESSIONAL EXPERIENCE

Morningstar: Senior Principal Software Architect (Market Data) Aug 2021 – Present

- Found Cloud cost savings of \$300k per year for petabyte scale archiving and retrieval of historic market tick data.
- Produced multi-year, Multi-Cloud / Hybrid-Cloud messaging SaaS strategy and architecture for real-time market tick data, evaluating AWS, GCP and Azure.
- Performed successful Proof-of-Concept of Solace PubSub+ Cloud messaging product using a multi-region, AWS test environment for transforming market data volumes.
- Produced Hybrid-Cloud architecture for moving on-premise, feed handler real-time market data to Amazon Cloud, to transform data quality, reliability, and delivery capability.
- Produced 1 year plan for transforming SRE and observability capability for current 10+ Data Centre market data platform.
- Devised automated processes to generate exploratory reference deployment and architecture models for 10+ year globally distributed systems. This will transform the capability to support 3x increase in data volumes over the next two years.

Career break and Volunteer Vaccinator (2021), St John's Ambulance Jun 2020 – Aug 2021

BGC Partners: Development Manager – Head of Big Data & Messaging Jan 2018 – Jun 2020

The Big Data team was responsible for the strategic Data Plant platform used for the aggregation and standardisation of trade and order data generated globally by BGC, Fenics Market Data and Cantor Fitzgerald. The system provided real-time streaming and bulk query to Trade Regulatory Reporting, Market Surveillance, Business Intelligence and Quantitative Analytics systems.

The Global Messaging team was responsible for API frameworks and distribution of real time, fast moving financial data throughout all global entities providing publish/subscribe, event processing and point-to-point queues utilising a resilient service-oriented architecture.

The architecture utilised Hadoop (Cloudera), Cassandra, Elasticsearch and Kafka integrating Enterprise API Solace Messaging and Tibco Enterprise Messaging to integrate global systems.

Achievements

- Instilled a culture of customer-first, end-to-end ownership of the firm's data platforms.
- Delivered resilient data platforms critical for all electronic and voice brokerage revenue.
- Made \$400,000 of cost savings on support costs and capital expenditure.
- Delivered the transformational migration of the firm's strategic data platform during COVID-19 UK lockdown greatly reducing business continuity risk.
- Built centre of excellence for Big Data, recruiting team leads, senior developers and DevOps engineers. Attracted candidates possessing a rare combination of data engineering skills to develop and operate the data platform across US, EU & Asia.
- Architected and managed a phased migration to shift and upgrade the data platform including Disaster Recovery provision with parallel environments for redundancy and test.
- Overhauled the data feed onboarding process through improved Agile processes.

- Hardened the deployment model enhancing stability, scaling and resilience.
- Defined and delivered the strategy to further expand the messaging platform, Enterprise API, to serve all global entities and run-the-business applications.
- Converted strategic plans into actionable programs and projects.
- Drove a customer-led, continual enhancement programme for API middleware.
- Successful integration of multiple AWS hosted systems into the global messaging mesh.
- Integration and migration of data systems inherited through Mergers and Acquisitions.
- Effective and productive transition of both Data and Messaging teams to WFH through COVID-19 lockdown, including onboarding of new developer resource.

Management Responsibilities

- End-to-end, customer-driven development and operation of Big Data and Messaging shared services enabling global data distribution and regulatory compliance.
- 24/7 Global distribution of Reuters market data and derived feeds for Fenics Market Data.
- Integrated two development teams building and operating business critical systems.
- Hired and developed world class teams to develop and operate shared data services.
- Engaged C-Level stakeholders and product owners to ensure 24/7 global interoperability of all systems relying upon Messaging and Data Plant, satisfying regulatory requirements.
- Identified and delivered continuous quality improvements to strategic data platforms.
- Championed Big Data and Messaging initiatives across the organisation.
- Managed Big Data and Messaging teams applying Agile principles using Scrum for development projects and Kanban for operations and support functions.
- Talent acquisition, appraisals, compensation and budget reviews, one-to-one mentoring.
- Supported and coached at individual and team level to promote personal development, demonstrating approaches to increase resilience and achieve potential whilst following a sustainable delivery schedule.
- Built relationships across global development to support the department as a shared service provider, promoting an inclusive environment for all team members.

BGC Partners: Development Lead – Global Head of Messaging Jun 2015 – Jan 2018

Project: Enterprise API (EAPI) design, build and ongoing operations Aug 2016 – Jan 2018

- Led the architecture, design and development of Enterprise API enabling BGC to satisfy data requirements for MiFID II, supporting Java, Python and C++ client/server applications.
- Expanded scope and scale of Solace powered Global Messaging services to serve all Front, Middle and Back Office systems both on-premises and in AWS Cloud.
- Devised and communicated strategy, seeking feedback from stakeholders and customers.
- Supported customers with a centrally managed messaging service, simplifying app delivery.
- Architected the messaging service for resilience and guaranteed delivery of data.
- Onboarded 200 applications for 170 business services, enabling real-time data integration for dozens of development teams and business units operating around the globe.
- Empowered API customers with self-service tools, diagnostic tools, UI's and training documentation for integration of new applications and training of developer users.

Project: Migration of Windows xCloud API from Tibco to Solace Jun 2015 – Aug 2016

- Responsible for the architecture, design and development of a global transformation project to migrate and modernise the legacy xCloud API ecosystem of micro services from multicast Tibco Rendezvous to the Solace messaging platform, eliminating technical debt.
- Spearheaded collaboration across business and technical teams for global migration.
- Successfully migrated all offices and data centres across US, EU and Asia for 150 applications across 1000 front office application instances with zero messaging down time.
- Applications included broker pre-trade desk analytics, server-side analytics and market data gateway stream publishers generating multimillion-dollar revenues.
- Made \$150,000 annual cost saving by global removal of Tibco Rendezvous.
- Devised novel architecture to support transparent parallel messaging systems globally.
- Architected seamless 'no code change' support for migrating legacy applications.
- Devised Business Continuity messaging architecture for Solace-based xCloud API.

PREVIOUS ROLES

BGC Partners: Development Lead – Front Office Messaging	Nov 2012 – Jun 2015
BGC Partners: C++/C# Senior Developer – Front Office Messaging	Jun 2012 – Nov 2012
Tradeweb: VP C++ Development Lead – Dealer Electronic Trading	Mar 2008 – Sep 2011
Tradeweb: VP C++ Senior Developer – Buy-Side Electronic Trading	Aug 2005 – Feb 2008
Tradeweb: AVP C++ Senior Developer – Dealer Electronic Trading	Oct 2001 – Aug 2005
Saturn Technologies (Start-up): Founding C++ Software Engineer	Jun 1999 – Oct 2001

VOLUNTARY ROLES AND CERTIFICATIONS

Mental Health Support	Facilitator for public Zoom course: Hope in Depression	2022
Health Care	Covid-19 Vaccinator, St. John's Ambulance	2021
Cache L2 Certificate	Understanding Mental Health in the Workplace	2021
MHFA, England	Mental Health First Aider	2020

EDUCATION AND MEMBERSHIPS

Member	British Computer Society	2006
MSc (Distinction)	Information Systems Engineering, University of Reading	1998
BEng (Hons.)	Computer Systems Engineering (2.1), University of Warwick	1997
A Levels (straight A's)	Chemistry, Maths, Electronics, Physics, Bournemouth School	1994