
ENGINEERING / PRODUCT / TECHNOLOGY EXECUTIVE

Telecommunications engineer and MBA, expert in systems for its whole life cycle: Research & Development, Engineering, Commissioning, Operation and Maintenance. Unbeatable track record gained through the development of seven cutting-edge innovative and strategic products, most of them turning into key competitive advantages for companies in three different markets. Seasoned executive with natural communication skills to link complex technical concept to non-technical shareholders, board members, C-suite colleagues, and partner companies.

SKILLS & COMPETENCES:

- Engineering Management
- Traditional and Agile Methodologies
- Distributed/remote team coordination
- B2B Client and Vendor management
- Transportation /Mobility/ Toll systems
- Real-time/embedded/IoT systems
- Research & Development
- Software Development
- Project Management
- P&L Management
- Railway Signaling
- Safety-Critical Systems
- Operations & Maintenance
- Product Management
- Coaching and team Building
- Team Recruitment/hiring
- AI/Machine Learning
- B2B SaaS

PROFESSIONAL EXPERIENCE

Role: VP of Engineering (2022 – current)

Company: Fidesmo. Start-up company becoming the world's leading secure element enabler.

Description: Reporting to the company's CEO leads the engineering team to develop new security B2B services (SaaS) and products to Fidesmo's customers while running current operations smoothly. As part of the management team (steering committee) contributes to strategy and business development of the company. The new approach to the engineering process and the support management has impacted in the forecasted EBITDA for the current business plan with a 15% growth. The change of strategy in both B2C and B2B support has a 15% direct impact in the forecasted EBITDA of the company for the current business plan (2022 – 2025)

Role: Engineering and Innovation Manager (2020 – 2022)

Company: Openvia. New tech branch for Globalvia, based on the products developed during DevOps project.

Description: As Engineering and Innovation Manager reports directly to the CEO for development of new products based on computer vision (Deep learning). During this period two products were in the company R&D pipeline:

Smart Licence Plate Recognition: A prototype improving our systems success rate KPI from 70% in USA to 88%

Multi-lane Free-Flow gantry: A solution that can reduce the cost of MLFF road-side equipment up to 80%

Role: Project Director (2017 – 2021)

Company: Globalvia. Railways and Highways concessions management company (Multinational, 26 PPP in eight

countries). **Description:** As the leader for this program, selected and hired three area/product managers to create a 40 engineers distributed team (with a 50% - 50% mix internal and outsourced), developed from scratch three innovative mobility products (SOA, cloud based, real-time, etc.), creating an agile DevOps culture within the company and carrying out 12 core systems deployments for eight different concessions in four years. Thanks to the program these goals were achieved:

- Allowing an actual continuous improvement for operations and maintenance, which were extremely limited by the lack of commitment and performance of most providers, which keep Globalvia as captive customer.
- Extending the life cycle of O&M systems, affected by the mentioned lack of improvement and the fast-changing technological environment, improving both the CAPEX and OPEX in the short and long term.

- Creating a competitive advantage for Globalvia for future tender and purchase processed by creating internally the competences and know-how to reduce the takeover time and cost for new concessions, while deploying cutting-edge O&M Systems at a unbeatable market cost
- Saving around 2 million € just in O&M systems CAPEX and creating three products estimated in 3,7 Million €.

Role: Head of Operation and Maintenance Systems (2014 – 2020)

Company: Globalvia. Railways and Highways concessions management company (Multinational, 26 PPP in eight countries).

Description: As O&M Systems Manager reports directly to the COO for three different goals:

- Coordinate the systems renewal projects within all the company concessions supervising the technical specifications, the scope of works, the planning and the budget. With a leading role in the contract negotiation with providers to ensure a balanced risk management, a right SLA and KPI definition and a smooth project management.
- Define the CAPEX and OPEX strategy and budget for O&M systems for the all the concessions in the company.
- Participate in the investment proposals for tenders (greenfield projects) and purchases (brownfield projects) by estimating the whole life-costs for systems (CAPEX and OPEX).

From 2014 to 2016 lead all the systems renewal for the company and a greenfield project in Chile, Tramo Urbano (Santiago – Lampa). This 18 million € project was the first Multi-Lane Free-Flow (MLFF) system entirely managed by the company.

Role: Engineering Manager (2011 – 2014)

Company: Indra. Spanish technological leader (Multinational, 36,000 employees worldwide, € 2,600 million sales in 2011)

Description: Framed in Indra’s strategic initiative to become a future key player in the signalling market, led as an independent consultant a team of seven senior engineers (mostly hired and coached by himself) to design and implement the safety-critical procedures that will ensure the deployment of the new ATP signalling systems (RBC) in the upcoming projects. According to the required safety standards (CENELEC EN 50126, EN 50128 EN 50129), also led the design and development of the whole software tools set required. Additionally provided the R&D team with the technical support and expertise needed for the development of the safety-critical embedded system (RBC) and managed commercial agreements with international providers of key subsystems (i.e. BTM).

The development and homologation of the ERTMS Level 2 trackside system (RBC), achieved in the first quarter of 2014, allowed the company to participate in the next high-speed lines tenders, with a cutting-edge product (RBC) and a remarkable competitive advantage in terms of cost (30% below the known benchmarking) and deployment time.

Role: Engineering Expert (2009 – 2010)

Company: Alstom. Main player of the global railway signalling market. (present in 60 countries with 27,000 employees).

Description: As an external consultant, was in charge of improving the engineering procedures, according to the applicable safety standards (CENELEC), for the deployment of ERTMS/ETCS trackside systems (LEU) for three brownfield (third rail) projects in the Northeast of Spain, belonging to the TEN-T project. The new procedures and tools developed reduced the engineering time and costs by 80% in new systems deployments, also minimising the “redo” time due to customer changes.

Role: R&D Manager (2007 – 2009)

Company: ENYSE. Key player of the Spanish railway signalling market, leader in level-crossing systems in Spain.

Description: Led the development of a brand-new ERTMS level 1 track system (LEU) under SIL4 CENELEC standards, taking responsibility for the whole system conception, project planning and team leading. Also coordinated other teams for processes related to ERTMS/ETCS engineering and product development.

A full prototype was completed showing the feasibility of some key innovations introduced in the design. This innovative solution drastically reduced both time-to-market of the product and engineering costs on deployments for ERTMS systems.

Role: Project Manager (2006 – 2007)

Company: Cintra (Ferrovial). Highway concessions company, one of the top 5 global players. (Sales €868 mill)

Description: Co-led the creation from scratch of a new department for toll systems, aligned with the company's decision of substituting the main external systems providers for this new team. As department manager, was in charge of the team building and hiring, negotiating contracts with subsystems vendors and the outsourcing company. As project leader, had to acquire all the know-how from the current Cintra toll systems, developed by external companies, in less than three months, to design and develop a whole new solution for toll systems, to control and manage vehicle detection/classification and allow payment through electronic means (ETC and credit cards).

The development of this first proprietary toll system for the company, achieved the technological independence from the main providers, at a minimum cost (under €200,000) in record time (10 months).

Role: R&D Engineer/Developer/QA Manager (2001 – 2006)

Company: Siemens (Dimetronic). Spanish and (after the acquisition of Invensys) global railway signalling leader.

Description: As R&D engineer, was one of the core developers of some of the most strategic products for the Invensys Rail group: FS3000 (joint-less track circuit), Futur3000 (ERTMS level 1 trackside systems) and Westrace MKII (new Interlocking). For the FS3000 project, was in charge of the V&V team for the safety-critical software, developed in Assembly for the chosen DSP. The task included the design and development of a full ad-hoc V&V suite (LDRA Testbed like) for this specific language. Also led the team for the V&V tasks: software static verification, black-box testing, white-box testing, coverage analysis, data & control flow analysis, etc. Participated also in the safety case justifying all the tools, procedures and methodologies used in the V&V against the mandatory safety standards (CENELEC EN 50128) for SIL4.

In the LEU (ERTMS/ETCS level 1 trackside system) project was responsible for the safety-critical software design and development (under CENELEC EN 50128 standard for SIL4 systems). Also led the hardware/software integration, designing and developing the low-level API (C and Assembly) for the proprietary safety platform (embedded system). This product led to the company being awarded several key High-Speed contracts for the company in Spain (Tarragona-Barcelona, Madrid-Valencia, Cordoba-Malaga, Madrid-Valladolid, etc.) and abroad (Mecca-Medina in Saudi Arabia).

During the Dynamic TSR system project was the main driver of the complex integration between all the systems and procedures involved in the trackside systems (Interlocking, LEU, operation terminals and engineering), introducing a unique innovation in the ERTMS level 1 trackside systems that became a key technical competitive advantage for the company.

Role: Developer (2000 – 2001)

Company: Redsys (Sermepa). Electronic payment provider for Visa and Mastercard, Spanish smartcard market leader.

Description: Responsible for the design and development of smart card applications (C and Visual Basic) and communication drivers. Improved the smart card applications through the optimization of communications drivers.

EDUCATION

- Telecommunication/Electronics Engineering Degree, Universidad Politécnica de Madrid, 2001.
- Executive Master in Business Administration (MBA), ESADE Business School, 2010.
- Certificate in Advanced English by Cambridge University, 2010.
- Artificial Intelligence Course, Stanford University (Online) 2011.
- Railway Engineering Expert (625 hours course). Universidad Nacional de Educación a Distancia UNED, 2016.
- Certified Scrum Product Owner. Scrum Alliance, 2019.
- Executive Program for Digital Business (PADDB+), The Valley Business School, 2022.