

CSIR

EVENT MANAGEMENT TECHNOLOGY

One Platform for Every Event

Replacing rented, third-party event software with an owned, open-source platform built for the CSIR — engineered for cost control, secure data flow and rapid delivery.

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Executive Summary

Our customer is in the public sector and a leading South African science and technology organisation, researching, developing and diffusing technologies that accelerate the country's socioeconomic prosperity. Its work spans industrial development, re-industrialisation and building a capable state, delivered through many divisions that each run their own programme of events.

Each division managed its events independently and had no software of its own to run them. We were engaged by the Department of Science and Innovation to deliver an event management system built for their specific needs, with cost and time front of mind from day one — which is why the solution was built on open-source technology rather than licensed software. Once proven, the same platform was rolled out to other departments, with the core objective of giving every exhibitor and innovation the exposure it deserves at each event.

The brief wasn't to rent another events app for the next event. It was to give the CSIR a platform it owns outright — one that could absorb a new department's requirements without starting from zero.

This case study is a working example of our ability to take a fragmented, service-dependent operating model and turn it into a single, owned, extensible application — one that keeps costs down without cutting corners on functionality, security or scale.

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app stores: Apple,
Google Play & Huawei
Gallery

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owned platform
replacing rented event
software

**Multi-
Dept/Event.**

rollout beyond the
original department and
event

End-to-End

delivery: strategy
through to production

The Business Problem

The customer relied on independent third-party event organisers to run its events and inform attendees. Those organisers rarely owned their own software and often worked from short-term “rental” platforms hired in for each event. That meant the customer was tied to a different vendor every time, with no way to track repeat attendees, offer add-on services, or build any lasting institutional visibility into its own events.

Multiple attempts over several years to buy a suitable off-the-shelf product came up short: most available solutions were rental or service-based, and none matched the requirements closely enough to be worth owning. Underneath that surface-level gap sat a harder set of constraints that any workable solution would have to absorb:

- Data shared securely between installations with no manual, human-in-the-loop handling.
- A sharp reduction in Excel-based data extracts and imports, replaced by a full, traceable history.
- Data imported from APIs wherever possible, rather than spreadsheets and manual reconciliation.
- The ability for an external event organiser to push attendee data directly into the application.
- A datastore — SQL Server — built to support future external reporting tools, not just the app itself.
- A tight cost and time envelope, ruling out expensive licensed platforms from the outset.

Left unsolved, the cost of doing nothing was concrete: manual attendee consolidation in spreadsheets, third-party bulk email tools bolted on to notify attendees of changes, and a process that was slow and prone to error at exactly the moments — live events — when it mattered most.

Why This Was a Hard Problem to Solve Well

Building an events app is not hard. Building one that an organisation can own outright, extend across departments, and run on open-source infrastructure without sacrificing security, traceability or functionality is a different order of problem — and that difference is exactly where we add value.

Ownership without the enterprise price tag

The brief ruled out licensed platforms on cost grounds alone, which meant every enterprise-grade requirement — security, auditability, role-based access, future reporting — had to be engineered on a LAMP stack rather than bought off the shelf. Minimising licensing cost could not be allowed to mean minimising capability.

Secure, automated data flow by design

Reducing Excel hand-offs to near zero while still letting an external event organiser push attendee data into the system meant building an API-first integration layer with full history and traceability — not a convenient upload button, but a controlled, auditable channel for data entering the platform from outside it.

One platform, many departments

The first version was built for a single department's requirements, but it had to be built for reuse from the start so that other CSIR divisions could adopt it without a rebuild — a genuinely different design goal from a single-purpose event app, and one that shapes almost every architectural decision underneath it.

Knowing which constraints were non-negotiable — cost, security, traceability — and which had to flex across departments is what turns a single build into a platform an entire organisation can stand on.

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Our Role: From Problem to Platform

We owned delivery end-to-end — from requirements analysis and specification through development, testing, deployment and project management — so the same team that understood the CSIR's operating constraints also built and shipped the platform that answers them.

- Analysed requirements with the project team and stakeholders, and verified web application functionality to identify changes needed to support the mobile app.
- Created specifications for the mobile application, web portal and APIs.
- Developed the end-to-end solution.
- Tested the solution and assisted users with UAT testing, facilitating formal signoff.
- Deployed the mobile app to the Apple App Store, Google Play Store and Huawei App Gallery, and the web portal to internal servers.
- Managed the project from initiation through to go-live.

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The Solution We Delivered

The result is a web portal and mobile application built on open-source technology, giving the CSIR full ownership of its event management capability — from event creation and content management through to live attendee engagement and post-event reporting.

Web Portal

Built in Symfony on a MySQL database, the portal lets organisers create a new event and fully capture and maintain everything attached to it — sponsors, exhibitors, innovations, programmes and meetings — hosted on the CSIR's own internal hardware and managed by internal resources.

Mobile Application

A Flutter application gives attendees a single, ongoing home for every CSIR event: announcements and notifications delivered by push, and programme items live-streamed to the app with recordings available afterwards for a defined period.

Platform capabilities at a glance

- Full event creation and management, covering sponsors, exhibitors, innovations, programmes and meetings.
- Announcements and notifications delivered via push notification technology to the mobile app.
- Live streaming of programme items, with recordings retained for a set period afterwards.
- API-first data integration, including secure ingestion of attendee data pushed by external event organisers.
- Full audit history in place of ad hoc Excel extracts and imports.
- Role-based security controlling access to specific web application functionality.
- A single mobile app installed once, giving attendees access to the full list of CSIR events.
- Seamless registration across mobile, web app, website, on-site entry and third-party channels.
- Attendance tracking and download proof of attendance

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Technology Stack

Web Portal	Symfony framework on a MySQL database, part of a full LAMP-stack, open-source build.
Mobile App	Flutter, deployed to the Apple App Store, Google Play Store and Huawei App Gallery.
Data Store & Reporting	MySQL for the application, with SQL Server as the platform for future external reporting tools.
Hosting	Hosted on the CSIR's own internal hardware, managed by internal resources.
Integration	API-first ingestion of attendee data, including direct pushes from external event organisers.
Delivery Tooling	SDLC managed with MS Project; source code managed with Visual SourceSafe.

Delivery Approach

We used an adapted Microsoft Solutions Framework approach to realise functionality quickly. The first stage established full scope and understanding through a detailed requirement statement from stakeholders, which let us complete the functional specification fast and get easy stakeholder signoff. Development teams then built from detailed designs once the look and feel of the mobile app had been formalised through a working prototype.

The solution was delivered in one phase: database and screens built function by function, APIs sequenced specifically to support mobile app development, and a working mobile build released weekly so look and feel, navigation and information flow could be tested continuously with real users — well before the production environment, data migration planning and go-live.

- Compile a business requirement statement with all stakeholders and development teams.
- Create all designs, including a prototype mobile app to finalise look and feel, and set the delivery sequence.
- Build the database and develop screens with business rules, function by function.
- Sequence and develop APIs to support mobile app development, releasing a testable build weekly.
- Test planned functionality against the design and run QA once enough functionality is available.
- Design and plan the production environment, and plan and validate data migration.
- Deploy once functionality is signed off: train users, migrate data and go live.

Every release and every dataset moved through this process under strict control — nothing reached production without being tested, validated and formally signed off.

Business Value Delivered

Stronger Control & Governance

- Full, audited control of data across the entire topology.
- Improved control over software versions.
- Role-based security controlling access to specific web app functionality.
- Fully auditable data creation and usage.
- The CSIR controls data availability and how long it remains accessible across platforms.

Lower Costs, Properly Planned

- Delivered as a well-planned, budgeted CAPEX project rather than an open-ended spend.
- An SLA component allowed functionality to be changed and added within allocated time.
- Licensing cost kept to a minimum by building on the LAMP stack.
- Low ongoing operational cost to support the application during live events.

Greater Attendee & Management Visibility

- Attendees get access to every item of an event, with immediate notifications and announcements during it.
- A single app install gives access to the full list of CSIR events, not just one.

Flexible, Seamless Access

- Registration works seamlessly across mobile, web app, website, on-site entry and third-party channels.
- Attendees can engage with events either online through the mobile app or in person.
- Third-party event organisers can still be used, with central management and control retained over all data and functionality.

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Why It Matters

This project is a working example of what we do best: take a business problem shaped as much by cost constraints and organisational fragmentation as by technology, and turn it into a robust application the CSIR owns, controls and can extend on its own terms.

- Open-source foundations can meet enterprise requirements when security, auditability and governance are engineered in from the start, not bolted on.
- An owned platform beats rented software the moment an organisation needs to track loyal customers or prove value over time.
- API-first design is what makes secure, traceable data exchange with external parties possible without manual handling.
- Designing for reuse from day one is what lets a single-department build become a multi-department platform.
- Weekly, testable builds keep a mobile experience honest — look, feel and navigation get validated long before go-live.

If your organisation is managing events — or any recurring operational process — through a patchwork of rented tools and spreadsheets, this is the kind of transformation we build: understood deeply, engineered properly, and delivered as a platform your teams will actually own.

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