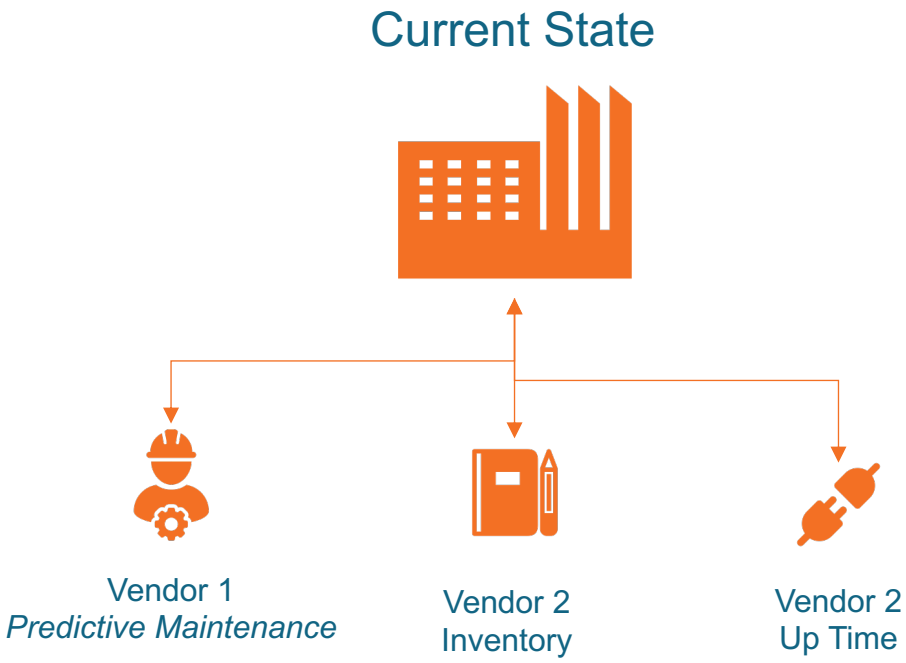
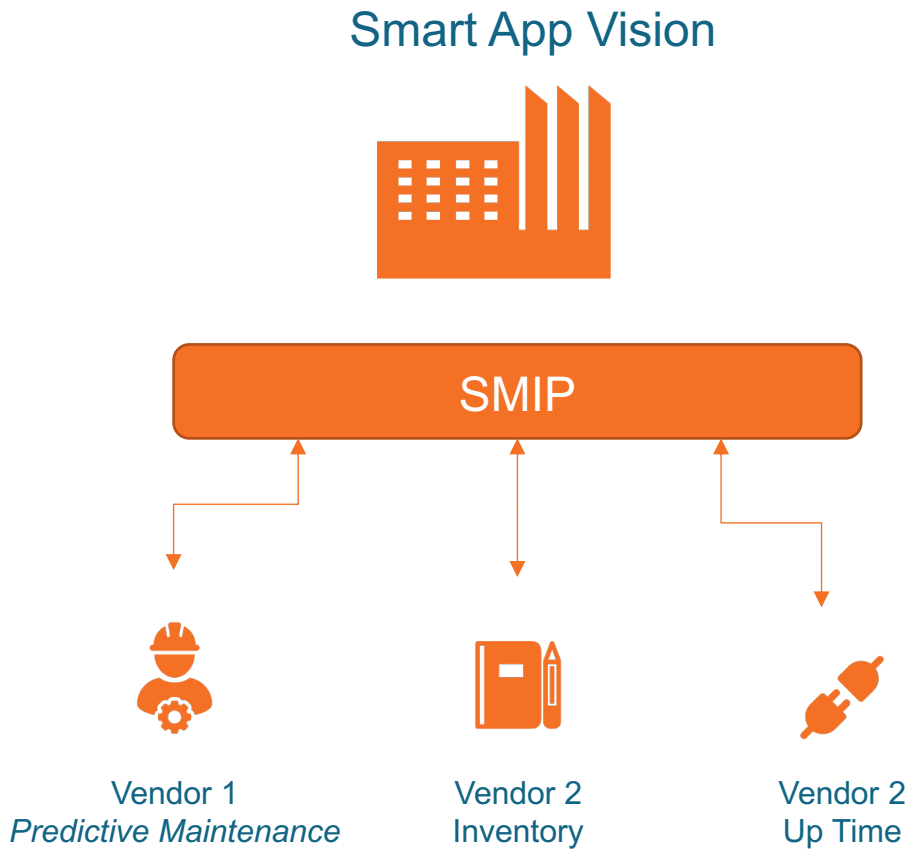
Smart Apps: The Bigger Picture





The Objectives

Companies

- Have access to more value-added applications
- Smart Apps are deployed in an automated, coherent manner that does not require creating any security or deployment compromises to make the applications work
- The Total Cost of Ownership of the applications will be lower because consistent administrative interfaces reduce the cost of system administration

Developers

- Focus more on the functionality that Smart Apps deliver and less on the infrastructure needed to make them work
- Will not be excessively constrained by choices of languages and tools that can be used to create Smart Apps
- Simplify leveraging the capabilities of the core platform
- Release updates asynchronously from ThinkIQ Platform releases and without having to have access to the customers systems
- Get visibility into feature usage

Academia

- Academia will be able to create applications deriving many of the benefits that Developers will see. Allowing them to focus on the research goals rather than on the challenges of software development

Technical Requirements

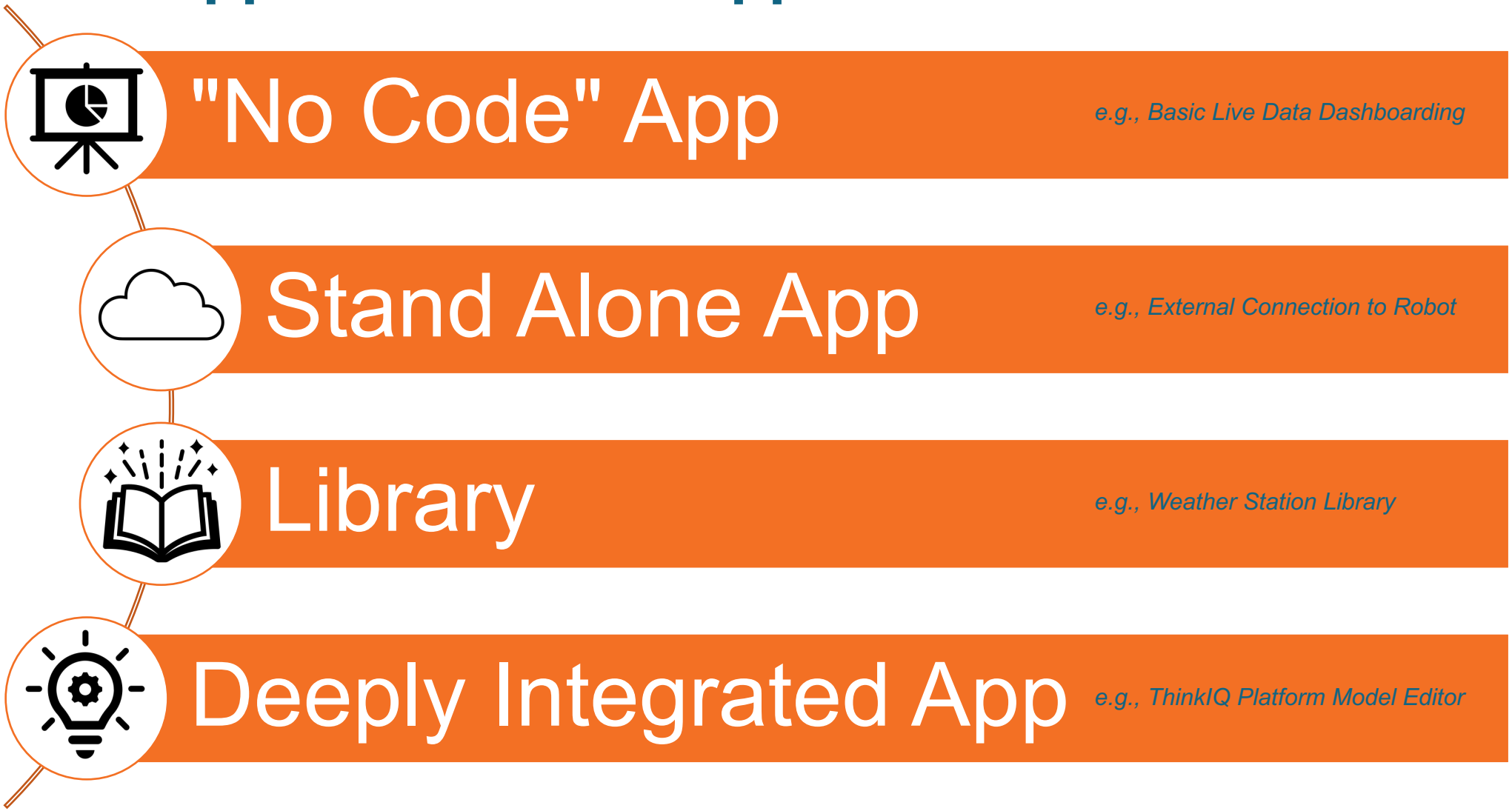
A middle-tier API that will provide programmatic access to the various service provided by the Content Management System

- Classes and Services that will allow Smart Apps to create, Update and Delete Profiles that are owned by the application ✓
- Classes and services to access current user information, roles and viewing access levels ✓
- Classes to be able to create navigational points (such as menu entries). ✓
- Access to the Content Management System pipeline to be able to deliver content embedded in pages that can integrate with other Modules and Components on that page ✓

Platform services to support Smart Apps

- Infrastructure for string Localization and language switching ✓
- A comprehensive sub-system to enable extension update and management and allow platform users to see if Smart Apps are up to date and allow them to update the applications ✓
- The infrastructure will provide hooks for Smart App creators to publish their applications and hook into the platform services to perform any upgrade dependency work needed ✓

The Approach: Smart App Continuum



The Approach Continued

	”No-code” app	Stand alone app	Library	Integrated Application
Description	Using modules that are part of the ThinkIQ Platform to create live data applications.	Applications that run outside of the platform that use tokens as authentication to read/write data to the platform and perform functions outside the platform.	Applications created within the platform using the integrated development environment (Mini-IDE) and contained within libraries (both ThinkIQ and Cloud Libraries.)	Extensions that can be added to the platform utilizing all its capabilities.
Capabilities	• Drag & Drop UI components • Development coding not required • Tightly integrated within the platform	• Low barrier to entry • Separate run-time environment • Language agnostic • Platform agnostic	• Tightly integrated within the platform • Uses the same tools as the core platform • Access to content management system and ThinkIQ APIs	• Built-in language localization • Built-in update server • Access to content management system and ThinkIQ APIs • Flexible database structure management
Limitations	• No custom coding	• No access to CMS API’s and or model abstraction API. GraphQL only.	• Supports PHP, JavaScript, HTML, Python, and SQL languages	• PHP, JavaScript, HTML, and SQL support. • Requires ThinkIQ platform development environment
Example use cases	• On-site plant engineer can create a dashboard to monitor information from the ThinkIQ platform	• CESMII members can create stand-alone applications that use the data and semantic model and publish apps to marketplaces.	• Almost unlimited use cases: analysis, dashboarding, data entry, machine learning, AI, etc.	• Deeply-integrated and complex applications that can be promulgated across many plants or uses.