

## Marketplace, an App Store for Manufacturers

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### Some questions for you

- Was it Apple's Apps in the AppStore or Google's Apps in the Play Store that made these marketplaces big?
- How can 3<sup>rd</sup> party innovators use a marketplace in the best way to address new customers?
- How can a set of tools and machines be connected even with differing standards and ways of communicating?
- Do all SMEs have to go to Bosch, SIEMENS, or GE when they want to have apps for Industry 4.0?
- Is a lock-in situation something that your company would like to avoid?

### Motivation

Apple's App Store created a multi-billion-dollar industry: applications for phones. In 2009, buying software for desktop computers was fairly simple, a customer went to the software trader selling applications for your Windows or Mac computer and paid for a cardboard box with a DVD in it, which you would put into your computer's DVD slot and install.

Apple didn't just take away all the physical stuff, since getting software over the internet was already common in 2009, but Apple made it the new standard. There was one place to get apps, and it was very easy to use and provided lots of features, such as automatic updates, compatibility, a working shop system that already knew your data, license models you already know and understand, a review process to make sure you would get quality work and a way to return software that didn't work as promised. The quality of Apps could even be assessed based on the user reviews reflecting the usage experience before you choose an app! Moreover, smartphones were a whole new sector – nobody had a clue about how to get new software for your phone – the DVD wouldn't fit in at least.

This was the same situation that is currently there with Industry 4.0. Companies now have smart machines and smart tools to use them, but every machine maker provides its own set of tools, software, and license models. Software is not necessarily reviewed well or free of bugs, so expensive service level agreement (SLA) are needed in case help is needed.

Imagine a world, where an Industry 4.0 software platforms use App Stores such as the ones used on smartphones. Multiple topics about taking the smartphone app store concept and transferring it to Industry 4.0 in ZDMP's Marketplace are discussed in this blogpost:

- What's the basic expectation of the Marketplace?
- What kind of application framework is necessary to make an App Store for Industry feasible?
- What license models are a good fit for users as well as 3<sup>rd</sup> party providers?
- How much money gets stuck in the marketplace and the underlying payment providers?

### A simple listing of apps – right?

The basic expectation for the Marketplace – which is ZDMP's App Store for applications, so called zApps – is a way for 3<sup>rd</sup> party developers to upload these applications, to describe them, to categorise them, and to provide a way for customers to find these zApps, to test them, and / or to purchase them in a way that they're directly usable via the internet. Also, it's not only downloadable apps, but also app-like ZDMP components (called zComponents) and ZDMP services (called zServices) with all the ZDMP marketplace offerings referred to as zAssets.

Creating such a Marketplace for phone applications is already a significant task. But also, the industrial software market is more fractured and needs to support applications and services that depend on other applications or services to work, so a modelling of dependencies between zAssets needs to be in place.

### What about the Customer? – Requesting applications

Even if there are 1000 zApps available, the right one for a specific company with specific machinery and specific employees (who might mostly be domain experts) might not be there. But how should the 3<sup>rd</sup> party developers know what the market is looking for, especially as the manufacturing software market is very diverse? ZDMP will create a public inbox for requests from users, who can describe the problem at hand, the equipment they'd like to use and maybe the pricing expectations that the users have to show the developers what is needed, for which context and how much people are willing to pay for it.

## Application Frameworks for License Models

The first interesting question for software developers is: what kinds of licenses are supported by the platform? ZDMP's Marketplace will support these license models for single zApps:

- Permanent License
- Subscription for X months (auto-renewing if wanted by the customer)
- Trial License

The number of users is also a variable that can effectively change the pricing, but this is handled in ZDMP by creating multiple licenses of the same type, eg a permanent license for a specific app can be created for up to 10 users, and another one for up to 1000 users. Trial licenses allow testing functionality, but only for a certain test period or with limited functionality.

## Marketing – Advertisements, Telemetry, and Referrals

Suppose a 3<sup>rd</sup> party developer has created a limited trial license for that 3<sup>rd</sup> party application. The 3<sup>rd</sup> party developer's paid versions would need to be advertised. Therefore, the promotion of upgrade options in the app is a basic requirement that 3<sup>rd</sup> party developers have to implement. For this, the ZDMP Application Builder already provides some template functionality for licensing and advertisements. Moreover, this promotion framework can be used to try out other business models, or place promotions for other services and zApps that the 3<sup>rd</sup> party developer wants to provide.

Referral marketing is one of the ways that Amazon used to quickly grow its user base. Anyone can create a referral link to a product in the marketplace and use it to advertise the product in their own Social Media channels and blogs – and, if something is bought using this link, the referrer gets a share of the transferred price. This generates significant possibilities for bloggers and influencers in the space and can lead to much quicker uptake.

Telemetry is a standardised way of feeding back information from zApps to a developer. This gives the developer information about how his zApp is used, which errors occur, and how useful the in-zApp marketing is. It's a base feature of other app platforms and helps developers to improve their applications.

## The Pricing, The Payment Providers and the Marketplace Commission

App Stores from Apple or Google take a standard commission of 15-30% of the transaction price to cover costs for management and operation of the store itself, as well as transaction-prices for the payment providers (banks, credit cards and electronic payment retailers such as PayPal) – even before taxes are applied. In the end-consumer market, this is a reasonable cut, as the profits are made by the number of users, not by a large price of the application. In Industry 4.0, it's the other way round: few customers, and lofty pricing. When a developer takes 3000€ from a 10k€ deal for the provisioning of a marketplace, there are much cheaper options available especially as the contact in B2B markets are much closer than in B2C mass markets.

This means that the ZDMP Marketplace has to be comparable or cheaper than smartphone B2C app stores, especially as this will be a big advantage over the Industry 4.0 Marketplace competition (which currently still orients towards earlier app store versions that took a 30% cut from the sales). It is not decided yet how big the cut will be that i4FS will take to operate the platform, but low-cost transaction APIs are used with the goal to minimise the cut while still allowing i4FS to be profitable and grow its services.

## What will ZDMP achieve

ZDMP creates an App Store-like Marketplace for zApps, zComponents and zServices. Flexible licensing, real-world tools for telemetry, advertisement, as well as reasonable commission constitute a solid basis for an app store for Industry 4.0. Highlighted are: Reviews and ratings, different data filters to find the application suiting a customer need, and promotion efforts to encourage 3<sup>rd</sup> party developers to implement and submit much needed applications. Some features not highlighted, but also interesting for users include cross-Industry 4.0-platform usability of zApps, the use of apps from other Industry 4.0 platforms in ZDMP, the complete local installation of ZDMP with the Marketplace serving as company-internal zApp-hub, the automatic virus checking of 3<sup>rd</sup> party zApps, backend-features like multilanguage support and multi-currency support, etc.

**ZDMP Links**

• <b>Architecture Component(s)</b>	Marketplace, Application Builder
• <b>Work Package</b>	WP6 – ZDMP Platform Building
• <b>Tasks</b>	T6.2 – Secure Business Cloud T6.1 – Application Builder and SDK