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| Mobile In-Store |
| Application Extension (MISE)  Concept |
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| **Bernard Craddock** |
| **7th January 2013** |

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| An In-store extension to you existing Retail mobile application that automatically notifies you of promotions you’re interested in whilst entering the store. |

# Document history

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| **Version** | **Date** | **Author** | **Status** | **Revision notes** |
| 0.1 | 7th January 2013 | Bernard Craddock | Draft | Initial version created |
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# Glossary

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| **Term** | **Description** |
| MISE | (verb) To obtain something good, especially in a manner that is fortunate and/or timely |
| MISE Central Server | MISE Central collects, collates and then publishes all new active-discounts downstream to MISE Cloud and respective MISE Store at the beginning of each business day |
| MISE Store Server | Store specific server containing all store specific active-discounts including product aisle location. Its primary objective is to serve these discounts to close Store proximity MISE Clients upon use request |
| MISE Cloud Integration | MISE Cloud is Integration between MISE Central, Store and Client. Its primary objective is to ensure store specific active-discounts are being delivered to the correct client device |
| MISE Client | MISE client is the end user smart device. Its primary purpose is to receive and review store specific active discount notifications of interest. With the objective user will purchase product |

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# Executive Summary

The objective of this Conceptual design is to introduce the idea of Mobile In-store retailing for Konzum. It outlines the principal concepts behind the idea and suggests and design approach that could be applicable for and implemented within the Konzum business model. In addition to this conceptual design please review accompanying document ‘Mobile In-Store App Extension MISE GCM Design’ which is a technical implementation design based upon Google Cloud Messaging (GCM) as the Cloud Integrator and Android as the smart phone handset. We hope you find these initial designs helpful and look forward to further discussions

# What is being proposed?

The basis of this proposal Mobile In-Store application extension (MISE) is basically an extension to Konzum’s current mobile application (app), that detects when a customer has entered a store and by light-weight notification informs the customer if this store has active promotions and if so would they be interested in viewing those promotions. If the customer is interested the app is launched using “In-Store” mode with all the promotion details including the regular price, promotion price, competitors price (if captured), in-store aisle directions and price savings.

If customer decides to purchase the product they can do so via either secure payment with home delivery if required or simply pay at the stores cash register, additionally all sales will be linked to Konzum MultiPlus loyalty card.

If however customer is not interested in the promotions they just ignore the notification and upon leaving the store notification is automatically removed.

MISE can also be customised to only notify on products or promotions of interest. For example a customer could customise their settings to only receive notifications when a 32GB Class 10 Micro SD card is selling for 10% or more off recommended retail is available. Additionally any number of notifications can be set from individual products right up-to a complete product range with discounts including both clearances and simple and complex promotions.

# Why is it being proposed?

It is believed the big potential benefit of this app extension is that because the customer is already in the store (or at least very close nearby) they are already shopping or at least window shopping and are more inclined to be curious of the promotions and take a walk by the aisle to check it out. However when the app includes user requested notifications that the customer receives whilst out shopping then the casual curiosity can quickly turn into a real sense of excitement. This app can also be adopted to include the Konzum Whole Sale customer

The additional hidden benefit of this app and perhaps it real potential is that it’s attractive to all retailers, and therefore with the correct approach can be marketed and licensed to other Retailers within the region that do not compete or our complementary to the Konzum business model, and beyond the region can potentially be marketed World Wide

# How will it work?

Following is a high level conceptual perspective of how MISE operates

1. Once daily (24hr period) MISE Central Server (MISE Central) collates and publishes all store/item/soh/discount-price “active-discounts” downstream to each MISE Store Server (MISE Store). It also publishes the store address details having active-discounts to MISE Cloud Integration (MISE Cloud)
2. Once daily (24hr period) each MISE Store receives item/aisle location from IPIS Store or other Store system recording product/aisle location
3. Registered MISE Clients are then notified of any active-discounts upon entering a Store. MISE Client can also set special interest notification preferences that only get fired when a Store’s active-discounts include an item of special interest. Special item/s of interest notification is set using MISE Client & smartphone intelligent voice search sent to MISE Cloud which now holds all important information including Stores active-discounts and users special interest request ready to serve a client when they enter a store
4. Throughout a normal business day MISE Cloud using smartphone location services detects when a registered MISE Client enters a store having active-discounts. Upon detection MISE Cloud checks its database so see if this client has special interest requests (client/item-X/price), and if so is that request matched within local MIS Store active-discounts (store/item/price/aisle), and if so MISE Cloud pushes the exact special interest details along with the notification down to MISE Client. If the special interest is not matched no notification is sent. If detected registered client has not set customised special interests then MISE Cloud just fires generalised promotions available notification to MISE Client
5. All MISE Client notification activity is background mode taking place within a few moments of customer entering the store and requiring no end user interaction
6. When MISE client receives notification end user can either ignore the notification in which case it will subsequently be removed later after leaving the store vicinity or, user can launch MISE client and review the active-discounts. If user launching MISE Client has requested and received a special interest notification then products details complete with aisle location are automatically displayed. If user launching MISE Client does not have customised special interest notifications MISE Store will serve the summarised view of active-discounts that the client can slice and dice according to user interest. Once Client criteria is chosen MISE Client requests from MISE Store fully details of selected product criteria with aisle location
7. Same store/discount notification will be limited to once per business day, and via user settings can be extended to include different store same/discount. For same store/different discount e.g. product ‘X’ 15% discount before 3pm and 20% discount after 3pm user will receive two notifications if they are in the store during this time
8. All MISE Client special interest notifications are no-longer sent when product is either purchased or request notification is cancelled via client user preferences. All downloaded Store/discount details remain on the client device for remote viewing until promotion end date, at which time they are automatically purged

The following describes above functionality specific to each MISE component Central Server, Store Server, Cloud Integration and Client device

## MISE Central Server

MISE Central Server (MISE Central) is the only server that physically must side within the Konzum corporate IT as this Server reads the Konzum product information and publishes it downstream to all the MISE components. MISE Central has two primary responsibilities 1) Collate and publish all new active-discounts once at the beginning of each Business day downstream to each MISE Store Server and 2) Collate and publish contact and address details of Stores having new active-discounts to MISE Cloud at the beginning of each business day. MISE Cloud Publication will be kept to minimum ensuring data privacy at all times

### Requirements

We are not privy to the workings of Konzum current mobile application and will therefore assume (please correct where wrong) the following. The Konzum Web Store feeds the Konzum mobile app and if so we may well expect it to also feed MISE Central. However MISE Central also requires the store/product relationship which Konzum current mobile app appears to be missing and if so it would need to be included. This requirement could be provided as an additional interface enhancement from your Web Store if the relationship is maintained or alternatively could easily be provided through an additional interface from either IPIS Central or directly from Oracle Retail pricing

## MISE Store Sever

MISE Store Server (MISE Store) contains all store specific active-discounts including product aisle location. Its primary objective is to serve the details of these discounts to the close proximity MISE Client end user upon request. MISE Store can either be internally developed and physically residing within each Store; or it can be considered and reside as a logical sub-component of MISE Cloud. It is also possible to consider having a combination of both a local proprietary MISE Store build for the larger Konzum, Idea and Velpro Stores integrating with MISE Clients via local Wi-Fi, and all other smaller Stores and Brands where it is uneconomic to support local MISE Store and Wi-Fi would utilize it a subcomponent of MISE Cloud

An in-house proprietary MISE Store solution could be very complex and therefore costly to develop the intricate Cloud and Client integration. In principle these intricate development costs are removed when MISE Store is considered and designed within the Cloud solution, with the potential downside being you will need to share your inventory with the your Cloud Service provider

However maintaining MISE Store as a subcomponent within MISE Cloud although considerably easier to developer and integrate does require Konzum to release inventory information to the Cloud Integrator. The thought of releasing inventory data specifically sensitive product pricing to a Cloud Integrator may at first appear in violation of company data privacy concerns however we would of course be ensuring the chosen Cloud Service provider maintain as an absolute minimum data privacy and security standards equivalent to those of Konzum, however in all practicality the provider may adhere to much higher standards, any potential Cloud Service provider would be evaluated on a case by case basis. Incidentally from a business perspective as we would only be releasing the sensitive pricing information for products that are actually scheduled to go on promotion the next business it could be argued this information is no-longer sensitive and broad, open and diverse publication of the discounted products at this time is an only very good thing for Konzum

### Requirements

MISE Store receives daily feeds from MISE Central containing product discounts specific for this Store and includes discounts that both start and end tomorrow. MISE Store also requires product/aisle location from other in-Store based system; I don’t believe IPIS Store currently provides this information. Lastly MISE Store receives and serves MISE Client requests (via MISE Cloud) for both summarised view of this stores active-discounts and detailed information of special interest products. Each of these is a completely new interface

## MISE Cloud Integration

MISE Cloud integration (MISE Cloud) is the new software paradigm within this proposal and with it comes all the opportunities and pitfalls that accompany any new paradigm. By definition the primary role of Cloud integration is to assemble & coordinate all pertinent store/product/price/aisle information from MISE Central/Store and publish it downstream to the requested Client device

This type of large and diverse integration is a very complex undertaking for any organisation to attempt alone even the most sophisticated Retailers would struggle developing this. However within today’s rapidly emerging cloud computing environment help is at hand, as several organisations provide this type of integration through there cloud messaging solutions with one of the most widely known and respected being Google Cloud Messaging for Android. However before any Retailer could entertain the prospect of permitting any external organisation access to their inventory data they would 1st require contractual obligations ensuring complete data privacy at all times.

### Requirements

MISE Cloud receives daily store/promotion feeds from MISE Central, it also receives Location synchronisation and special product interest requests from MISE Client. Special product interest request are redirected to MISE Store with results published back down to the specifically requested MISE Client. Each of these is a completely new interface

## MISE Client

The client device would essentially be available for both the phone and tablet and ideally include all the main mobile operating systems including Android, Apple IOS and Windows Phone also depending upon future demand this could be further expanded to include Blackberry RIM. Developing software for all these different platforms is an enormous amount of work I would therefore suggest we initially concentrate on the Android platform and specifically the phone as Android has the world’s largest market share of mobile devices with most of these being phones

### Requirements

As this app is essentially an extension to your existing mobile application it would be a requirement your existing mobile app is store/product aware, purchases via pay-pal or other are enabled including home delivery and purchases are linked to the Konnzum MultiPlus loyalty card. If these features do not currently exist within your mobile app it would be a requirement they be included

Fig 1.0 – MISE Concept Design

Client/location

Item of special interest

promo notification

Item of special interest

Item/aisle

Promo/item/soh/price

Promo/store

MISE Central

MISE Store

MISE Cloud Integration

POS

MISE Client