

SmartRetail

IT Reference Architecture & Solutions Portfolio for the Retail Industry

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IWC 2019



IT Consulting

100%
Open Source

- 1 Overview of current IT solutions
- 2 Retail trends
- 3 Upcoming IT trends on Retail
- 4 IT Reference Architecture
- 5 SmartRetail solutions & SmartJSP complementary releases

Pedro Rozo

- ✓ Systems Engineer - Universidad Distrital F.J.C.
- ✓ MBA – Company Direction Universidad San Pablo – España
- ✓ Project Management Professional – PMP - PMI
- ✓ Oracle Certified Enterprise Architect for Java (SCEA)
- ✓ **CEO - SmartJSP Solutions for Canada & Americas**
- ✓ Global Senior Consultant for Enterprise Integration, SOA, BPM, ERP, Middleware and Open Source

- ✓ +18 years of global IT experience delivering solutions for many industries such as: Telecommunications, Insurance, Healthcare, Retail, Agriculture and Finance, 100% Bilingual (Spanish & English) with a ideal balance of executive and technical strengths. Canadian & Colombian citizen.
- ✓ University Teacher for Post-graduate IT training and conference speaker for Universidad Distrital at Bogotá, and Universidad Tecnológica de Panama, also an IT trainer for SOA, middleware, architecture, integration and enterprise open source solutions for large organizations.

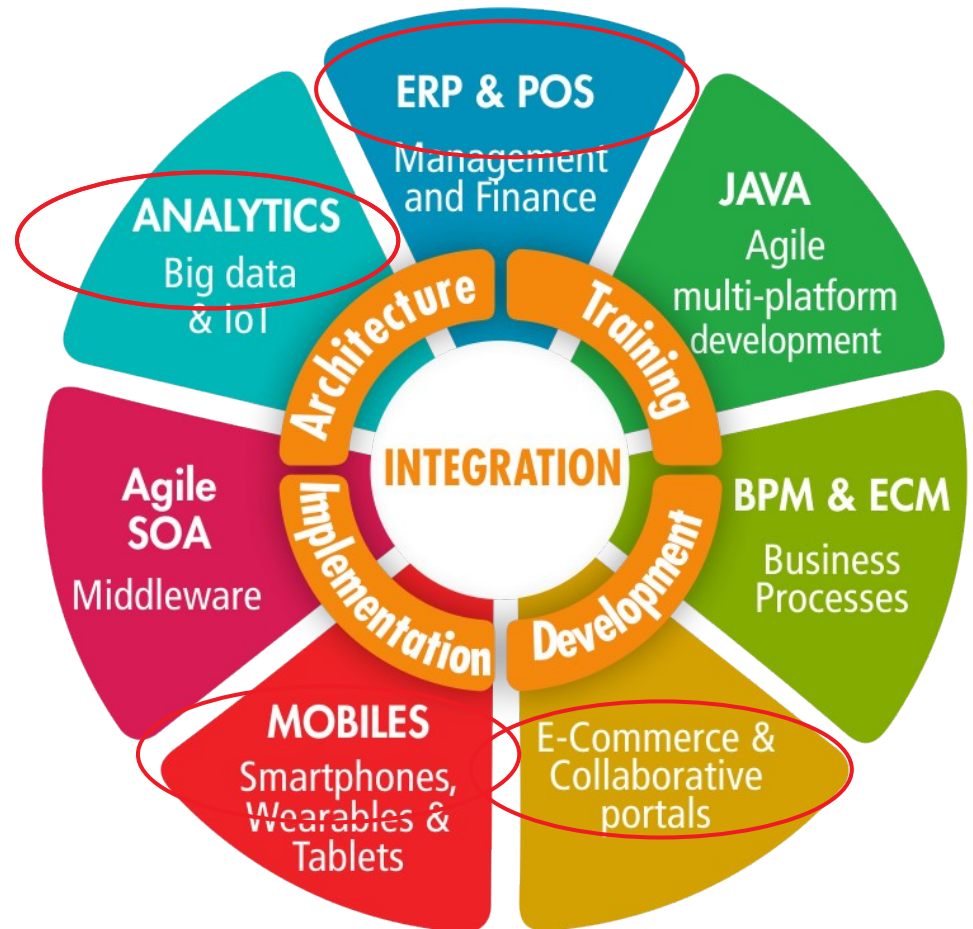
Our Company

- We create real agile & specialized IT solutions (Cloud, Onsite & Mobile) **integrating enterprise open source products** for distributed environments applying best practices and Global open standards.
- Founded in Vancouver, Canada in 2004 and established its engineering base in Bogotá D.C, Colombia since 2009, we have executed integration projects successfully for U.K., Canada, U.S.A, Ivory Coast, Spain, Panamá, Ecuador and Colombia.
- We perform advanced IT integration projects using service oriented architecture (SOA), **OSGi and Java enterprise** technology.

IT Specialized Solutions

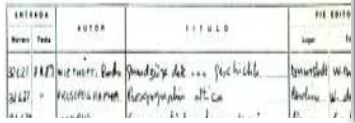
-  **Retail**
-  **Commercial**
-  **Supply chain & transportation**
-  **Manufacturing**
-  **Livestock farms & Agricultural**
-  **Healthcare**
-  **Online Government**

Global & Standard “Building Blocks”: Horizontal Solutions



1

Levels of Current IT Solutions for Retail



ENTRADA	NOMBRE	TITULO	PUEBLO
1212	MARTIN	COMERCIAL	ENERO
1213	MARIA	COMERCIAL	ENERO



Level 0. Manual process – (registers?) - pocket economy with paper history



	A	B	C	D	E
1					GAS
2	EMPRESA	DELEGACIÓN	COMERCIAL	MES	PUESTO
3	EMPRESA	GALICIA	ARTURO	ENERO	COMERCIAL
4	EMPRESA	CATALUÑA	YOLANDA	ENERO	COMERCIAL
5	EMPRESA	CANTABRIA	MARIA	ENERO	COMERCIAL
6	EMPRESA	MADRID	FRANCISCO	ENERO	COMERCIAL



Level 1. Simple Computer assisted invoicing



Level 2. Isolated Point of Sales (POS) solutions (stand alone) with bar code readers & payment stations (Credit Card) & Manual integration to finance processes (accounting)

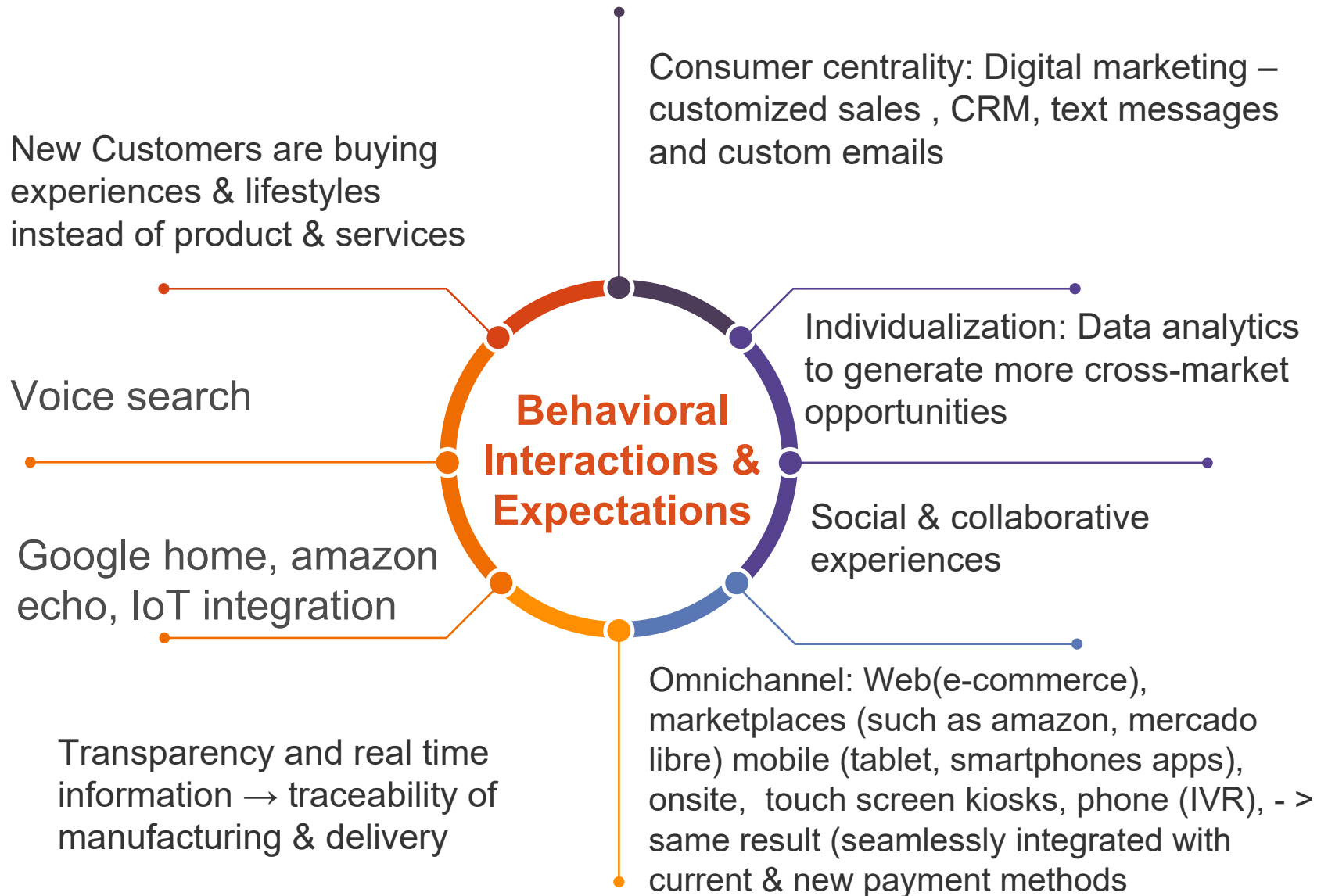


Level 3. POS workstations with background ERP integration



Level 4. Online POS (web) with seamless ERP integration (SmartPOS) (Online & Offline)

2 Retail Market Trends





1. Intelligent Capabilities

- ✓ AI - Artificial Intelligence (assisting humans)
- ✓ Machine learning (suggest solutions/articles)
- ✓ Intelligent things (user interfaces) - smart displays, drones, robots
- ✓ Data analytic (data science) (prospective based in historic data)
- ✓ Internet of Things (IoT) beacons to interact with customer smartphones

2. Digital business & ecosystems



3. Mesh – Let 's go social



1. Intelligent Capabilities

2. Digital business & ecosystems

- ✓ Digital twins (digital representations of the real world)
 - ✓ Cloud to the edge
- ✓ Conversational platforms (interactions with systems)
 - ✓ Immersive experiences, augmented reality



3. Mesh – Let 's go social



1. Intelligent Capabilities

2. Digital business & ecosystems



3. Mesh – Let 's go social



- ✓ Maximizing and optimizing connections among processes, apps & devices (social & collaboration experience)
- ✓ Event driven processing (more dynamic) pushing information instead of waiting for request scenario to orchestrate custom services
- ✓ Continuous adaptive risk & building trust

1. SmartPOS 6 (Optimized for pharmacies & retail stores)

- Compatible with idempiere 6.2 (Nov 2019)
new frameworks, maven build & so on.
- A lot of new functionality: [See New docs, videos & What's new →](#)
- New videos, new documentation divided on:
 - inventory management
 - Sales
 - Cash management
 - Reports
- QA Checklist & a lot of simplified processes (tablets, kiosks)
- Enhanced support to electronic shelf labels & [fingerprint authentication soon](#))
- New Secure DB scripts to upgrade from vanilla Idempiere 6.2 to SmartPOS 6.2 (DB solo) (waiting for testing)

2. SmartLoyalty 3.0 plugin (November 2019)

Loyalty programs management . → [See new Manual](#)

- Buy Points
 - International Transaction Fee
- Point Transactions
 - Transfer Points
 - Deceased Customer
- Member/Beneficiaries Report
- New Fields for SmartPOS
- Beneficiary Fee
- Record the transaction in Transaction Points

3. SmartServer 3.0 Since October 2016

Initially based on Raspberry PI, now based on **ASUS tinkerboard**, includes Linux Debian 10, postgres, SmartPOS tested under extreme situations: (limited internet connectivity, minimum power requirements, selective replication (SmartReplicator), supporting offline/online modes.



<https://www.asus.com/us/Single-Board-Computer/Tinker-Board/>

4. **SmartReplicator** 2.0 plugin (December 2019)

Selective online & offline replication for idempiere with a reactive approach.

Server side:

- OSGi plugin +
React java +
REST Web Services (Jersey) + JSON

Idempiere PO → JSON (HTTPS) → Idempiere PO .

Client side :

- A. Additional ERP (Other SmartReplicator)
- B. Mobile app. (online & Offline)
 - SmartProject (See next slides)
 - SmartOrder (See next slides)

5. **SmartProject** 1.0 (Mobiles APP for Android & IOS) January
Online & offline tasks/service request traceability, synchronized
with SmartPOS requests (request Engine)
(it uses Nativescript + SmartReplicator +



6. **SmartOrder** 1.0 (APP) March 2019)
Online & offline – ordering platform for SmartPOS

7. **SmartECommerce** 1.0

Webapp (2nd half of 2020)

E-commerce store – multilevel (amazon store experience)

8. **SmartRetailAnalytics** 1.0

(POC ready) Deployment in progress

- Big data & machine learning solutions to generate to increase sales and generate cross-market sales.

WS02 Analytic & Stream processing

1. **SmartPayment** (under development)
Web gateway to simplify setup & transactions with payment & loyalty providers thru integration with REST/oriented payment gateways.
2. **Smart IoT** – Gateway to support new generation of IoT devices to interact with customers: beacons, smart displays, TBD
POC – ready with WS02 Analytics & Stream processing
(Looking for sponsors)
3. **SmartMarketplace** To connect service providers with customers ..
(POC in progress)
4. **SmartLogistics** (under review)
Potential partnership with external shipping providers
5. **SmartReality (POC in progress)** (Looking for sponsors)
- Augmented reality models to simulate shopping experiences TBD
6. **SmartSocialPOS**: Digital marketing + social network tools for sales + CRM integration – January 2019




1. Human Resources - 2020

IT work done over 2 years with a team in Colombia, U.K, U.S.A & India



2. SmartSalud 1.0: HealthCare - 2020

It supports health care registry (MR) following HL7 standards, calendars (Appointment scheduling), automated commission rules and all with transparent integration with ERP



3. SmartAgro 6.0 (compatible with Idempiere 5.1 → 6.2) 2021

- Drones for automated distance monitoring,
- Radio frequency sensors (radar for animals)

More information

www.smartjsp.com



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