Chapter 1

TECHNOLOGY SURVEY

Odoo

Odoo is a suite of open-source business apps written in Python and released under the AGPL license. It is used by 2 million users worldwide to manage companies of all different sizes. The main Odoo components are the server, 260 core modules (also called official modules) and around 4000 community modules.

Odoo was formerly known as OpenERP until May 2014. It was rebranded because version 8 of the software included apps including website builder, e-commerce, point of sale and business intelligence. The software conforms to standard expectations of ERP systems, while providing additional modules beyond the coverage of traditional ERP systems.

The official Odoo apps are organized in 6 groups:

- Front-end apps: website builder, blog, e-commerce
- Sales management apps: CRM, point of sales, quotation builder
- Business operations apps: project management, inventory, manufacturing, accounting and purchase
- Marketing apps: mass mailing, lead automation, events, survey, forum, live chat
- Human Resources apps: employee directory, enterprise social network, leaves management, timesheet, fleet management
- Productivity apps: business intelligence, instant messaging, notes

The software is actively programmed, supported, and organized by OpenERP s.a.. Odoo is similar to many open source projects where customized programming, support, and other services are also provided by an active global community and a network of 500 official partners.

1.1 Business Applications

Odoo s.a. provides a web site referencing the officially supported modules as well as community modules.Community modules can be referenced for free as long as they respect the open source licence of Odoo. As of June 2014, the number of Odoo apps reached more than 4000.Official apps include:

- Sales Management
- Purchase Management
- Customer Relationship Management Project Management
- Warehouse Management
- Manufacturing Accounting & Finance
- Content Management
- E-commerce
- Asset Management
- Human Resource Management
- Fleet Management
- Event Management
- Social Network
- Point of Sale
- Knowledge and Document Management
- Calendar
- Expense Management
- Time Tracking
- Employee Appraisals
- Manufacturing Resource Planning
- Portal
- Employee Directory
- Address Book
- Recruitment Process
- Payroll Management

1.2 Architecture

Odoo uses a Service Oriented Architecture as a software architecture design pattern.

1.2.1 Web Application Architecture

The most recent versions of Odoo (including version 7) are mostly implemented as a web application. Odoo includes an application server/web server (known as the Odoo Server) that focuses on ERP business logic, stores data through an interface with a database, and web client for web browsers access. The server and business logic portion of Odoo is primarily written in the Python programming language. The web client is primarily written in JavaScript.

1.2.2 Modules

Business features are organized into modules. A module is a folder with a pre-defined structure containing Python code and XML files. A module defines data structure, forms, reports, menus, procedures, workflows, etc... Modules can also contain web components written in JavaScript.

1.2.3 Database

Odoo uses PostgreSQL as the database management system. PostgreSQL, often simply "Postgres", is an object-relational database management system (ORDBMS) with an emphasis on extensibility and standards-compliance. As a database server, its primary function is to store data, securely and supporting best practices, and retrieve it later, as requested by other software applications, be it those on the same computer or those running on another computer across a network (including the Internet). It can handle workloads ranging from small single-machine applications to large Internet-facing applications with many concurrent users. Recent versions also provide replication of the database itself for security and scalability.

PostgreSQL implements the majority of the SQL:2011 standard, is ACID-compliant and transactional (including most DDL statements) avoiding locking issues using multiversion concurrency control (MVCC), provides immunity to dirty reads and full serializability; handles complex SQL queries using many indexing methods that are not available in other databases; has updateable views and materialized views, triggers, foreign keys; supports functions and stored procedures, and other expandability,and has a large number of extensions written by third parties. In addition to the possibility of working with the major proprietary and open source databases, PostgreSQL supports migration from them, by its extensive standard SQL support and available migration tools. And if proprietary extensions had been used, by its extensibility that can emulate many through some built-in and third-party open source compatibility extensions, such as for Oracle.

PostgreSQL is cross-platform and runs on many operating systems including Linux, FreeBSD, Solaris, and Microsoft Windows. Mac OS X, starting with OS X 10.7 Lion, has the server as its standard default database in the server edition, and PostgreSQL client tools in the desktop edition. The vast majority of Linux distributions have it available in supplied packages.

PostgreSQL is developed by the PostgreSQL Global Development Group, a diverse group of many companies and individual contributors. It is free and open source software, released under the terms of the PostgreSQL License, a permissive free software license.

1.2.4 Source code and contributions

Odoo source code is hosted on the GitHub project hosting service, using the Git distributed revision control system. The documentation is published on a separate website.

1.3 Advantages of Odoo

1. A full Fledge ERP software : OpenERP version 7 comes with a modular architecture which provides you with new modules and further enterprise modules to streamline your business processes.

2. Search Functionality : With OpenERP version 7 you can easily search across the screen, you can also create advance search as per your requirement.

3. Speed : Unlike the old version of OpenERP – Version 7 is quite faster in providing you with the results and processing the request.

4. Directions made User Friendly : OpenERP 7 helps you with easy and quick directions on what next steps needs to be followed.

5. User Interface : The change in color of user interface which give a powerful feel to the user while using the software. Further the buttons are simple and screen is less clutter as compare to any other ERP software.

6. Going Social ERP : The first page of messaging once the user logged into the system offer you with quick list of task that is going on in their departments. User can join conversation similar to Facebook Notifications and every creation of task has been showed in the home screen to know What's Happening!

7. Apps : Apps is a new name given to List of Modules in OpenERP version-7. As there are more than 800+ modules available in OpenERP, further there are new addition of apps social media integration is one of them. Installation of Modules as per specific requirement is now much easier.