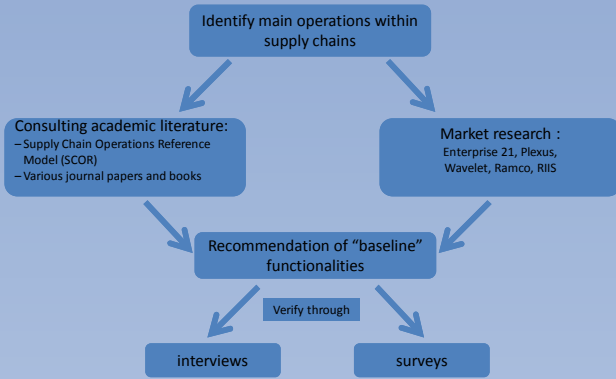**IBM**

# Market Analysis of Enterprise Resource Planning systems for Small and Medium-sized Enterprises

## Objectives

1. Perform market analysis for Enterprise Resource Planning (ERP) products for SMEs

2. Recommend a set of essential system features and functionalities
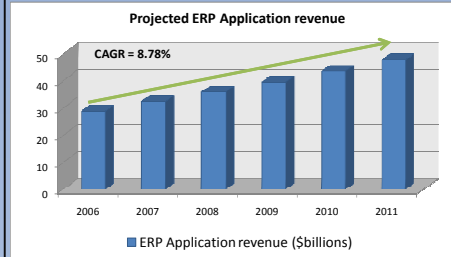
## Approach



Identify main operations within supply chains

Consulting academic literature:
– Supply Chain Operations Reference Model (SCOR)
– Various journal papers and books

Market research :
Enterprise 21, Plexus, Wavelet, Ramco, RIIS

Recommendation of "baseline" functionalities

Verify through

interviews — surveys

### Case studies selection criteria

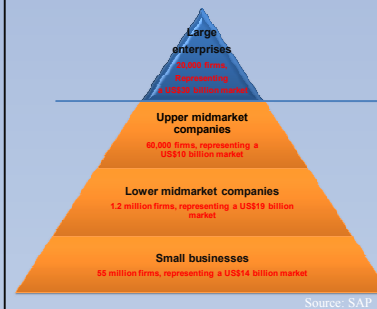| Criterion | Details |
|---|---|
| Size of system | Medium or small price range: <S$10k |
| Target Industry | Manufacturing |
| Target company size | SMEs # of employees < 100 |
| Platform of system | Preferably online system |
| Nature of system | Include both commercial and open-source systems |

## Market Analysis

### Overall market showing strong growth



Projected ERP Application revenue
CAGR = 8.78%
■ ERP Application revenue ($billions)
Source: AMR research. 2007

- Industry enjoying robust growth, registering a healthy compound annual growth rate (CAPR) of 8.78%
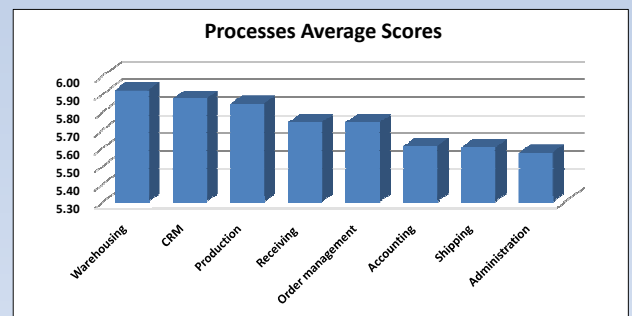- Very optimistic future outlook

### ERP market segmentation



Large enterprises
35,000 firms representing a US$37 billion market

Upper midmarket companies
60,000 firms, representing a US$10 billion market

Lower midmarket companies
1.2 million firms, representing a US$19 billion market

Small businesses
55 million firms, representing a US$14 billion market

Source: SAP

- **Market already saturated**
- **Market dominated by ERP giants such as SAP & Oracle**
- **High barriers to entry**

- **Market potential relatively untapped**
- **No established market leader**
- **Huge growth potential**

## Selected Functionalities

| Process | Selected functionalities |
|---|---|
| Receiving | ▪ Record inspection results of incoming goods<br>▪ Record down the storage of incoming goods |
| Warehousing | ▪ Identify the whereabouts of goods<br>▪ Record and update the status of goods at the warehouse<br>▪ List down the SKU quantity for cycle count |
| Production | ▪ Create the Bill Of Material (BOM) for products<br>▪ Support real-time data sharing between production and warehousing<br>▪ Generate, schedule and modify work orders |
| Shipping | ▪ Generate customer shipping orders<br>▪ Subcontract customer shipping orders<br>▪ Close shipping orders |
| Order Management | ▪ Request purchase and sales quotation<br>▪ Create and modify purchase and sales order<br>▪ Support real-time data sharing between order management and warehouse |
| Administration | ▪ Generate Master Production Schedule (MPS)<br>▪ Keep a database of employees' basic information |
| Accounting | ▪ Record accounting transactions<br>▪ Keep a general ledger<br>▪ Support multi-currency transactions based on the daily exchange rates |
| CRM | ▪ Provide a database of customer information<br>▪ Allow customers to provide feedback via an online portal |

## Survey Analysis



Processes Average Scores
Warehousing, CRM, Production, Receiving, Order management, Accounting, Shipping, Administration

- Average scores are above 5 affirming the general desirability of recommended features
- Modules like warehousing and CRM should be priority in software development

## Team Composition

**NUS Supervisors**
Dr. Chai Kah Hin
A/P. Chew Ek Peng

**IBM Supervisors**
Victor Lesmana
Ng Aik Beng

**Members**
Zhu Yuan    Lee Jianfeng Edmund
Li Jinbo    Shen Yongkang