

# MSC Malaysia Supply-Demand Study of the ICT Industry



F R O S T & S U L L I V A N

# Introduction

## *Project Objectives*

### **Aim**

To measure and understand the current state as well as the future evolution of the ICT manpower landscape in Malaysia

*Demand-Side Analysis*

*Supply-Side Analysis*

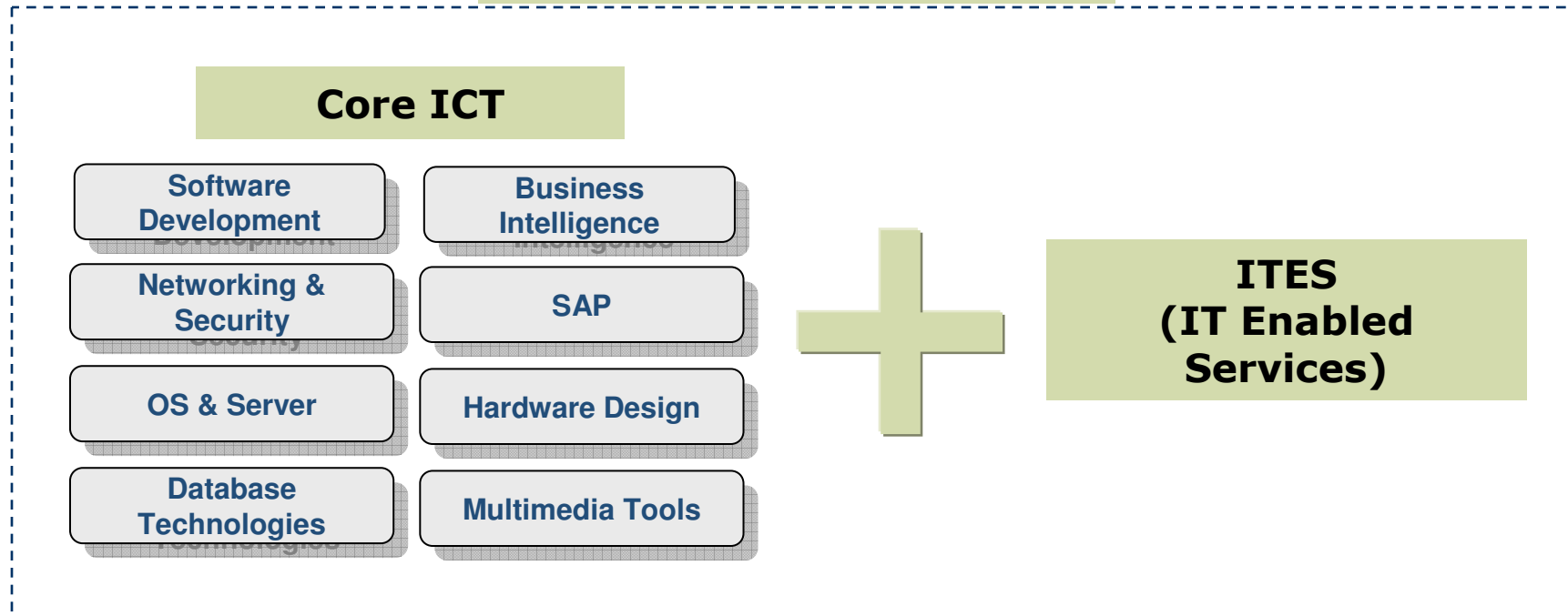


*Gap Identification*

*Gap Bridging Strategies*

# ICT Ecosystem

## Overall ICT Ecosystem

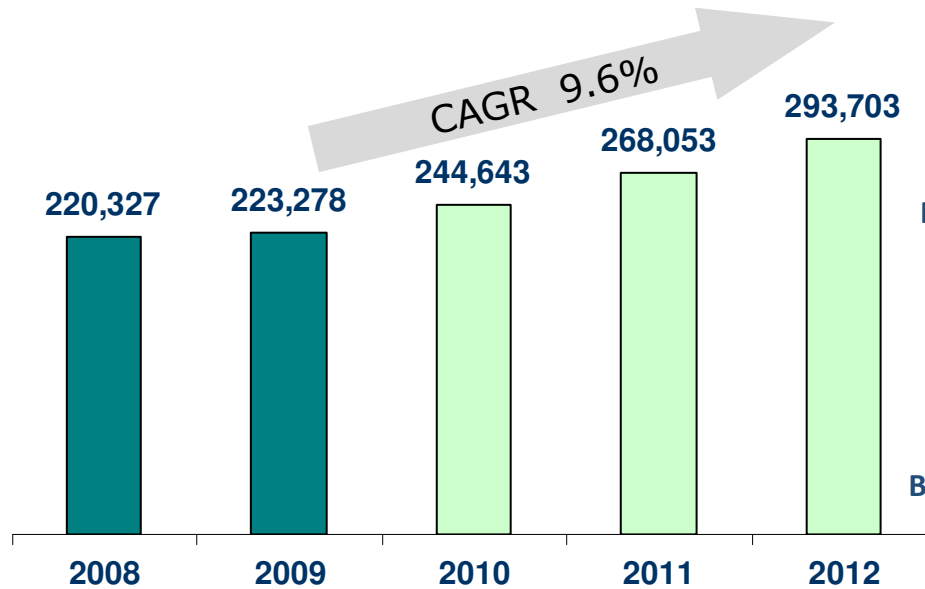


ICT industry has evolved into two major segments – Core ICT and ITES as depicted above

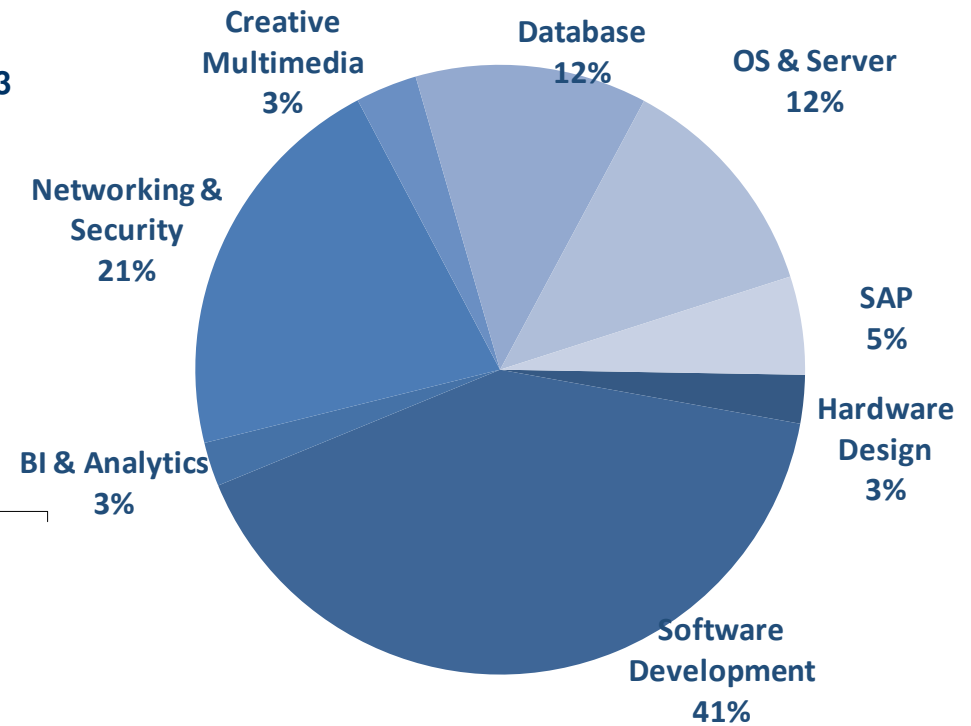
# Demand Analysis - Overall

## By Skill Sets

### ICT Demand Projection



### 2009 Skill Level Split



- Strong growth expected over the forecast period as economic recovery sets in
- Software Development and Networking & Security top skill areas

## Demand Analysis - Overall

### *Snapshot of Demand*

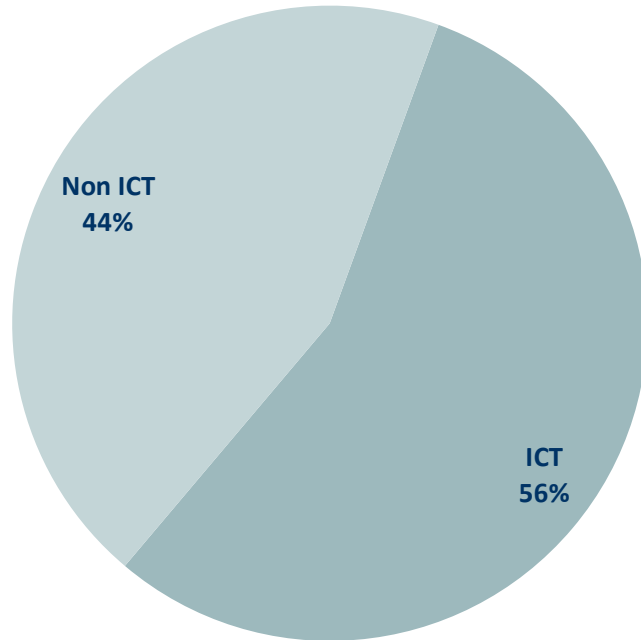
### *ICT Employee Strength by Skill Categories*

<u>Skill Category</u>	<u>ICT Employees 2008</u>	<u>ICT Employees 2009</u>	<u>ICT Employees 2012</u>	<u>Incremental Demand (2010- 2012)</u>	<u>CAGR 2012</u>
Software Development	88,799	91,410	115,210	23,800	8.0%
Networking & Security	48,671	47,174	67,659	20,485	12.8%
Database	25,757	27,432	37,573	10,141	11.1%
OS & Server	28,743	27,339	32,784	5,445	6.2%
BI & Analytics	4,407	5,233	6,787	1,554	9.1%
SAP	8,838	11,643	16,144	4,502	11.5%
Hardware Design	7,704	5,730	6,775	1,045	5.7%
Multimedia Tools	7,409	7,318	10,771	3,453	13.8%

# Demand Analysis - MSC Companies

## Company Demographics

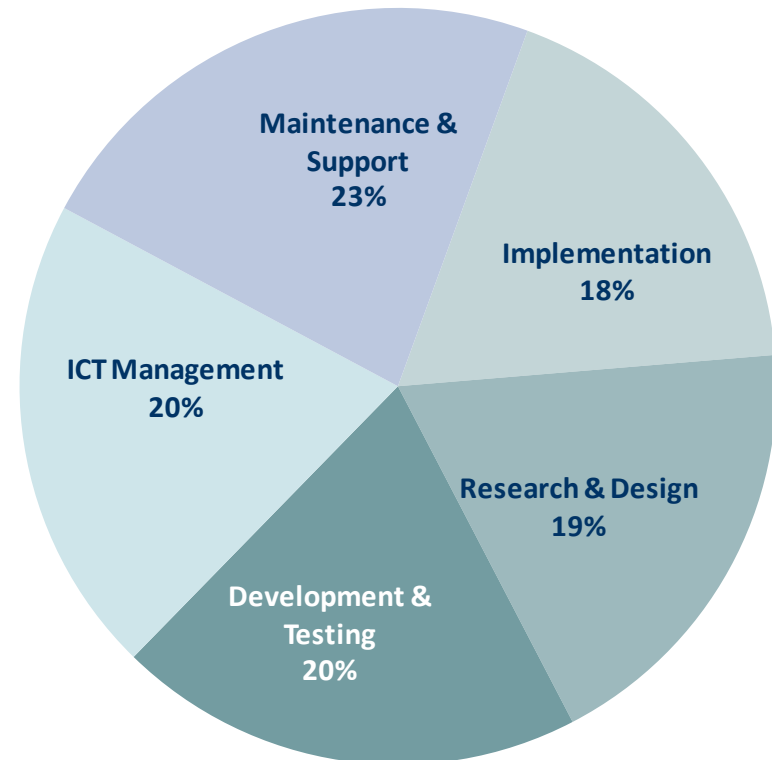
### Core Employee Role



**ICT Employees account for more than half of the current employees at MSC companies**

**Pretty even split between the job roles with Maintenance & Support leading at around 25% of the total employees**

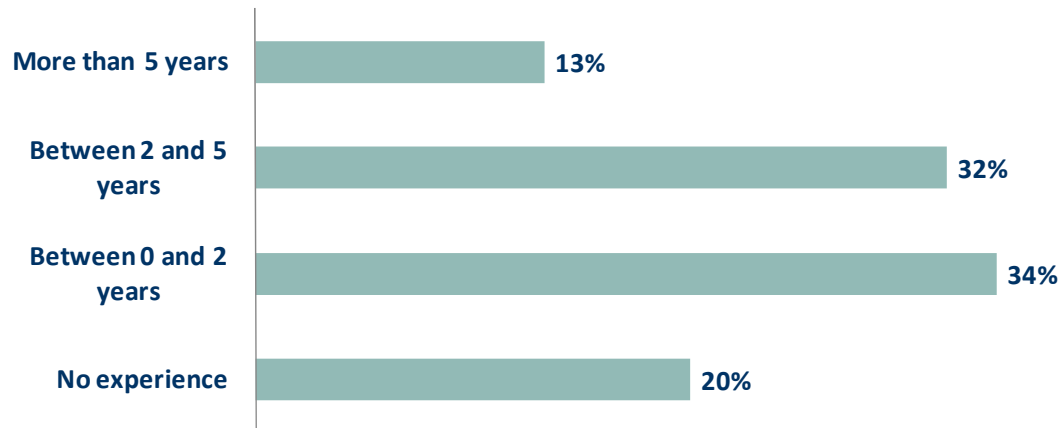
### Job Roles



# Demand Analysis - MSC Companies

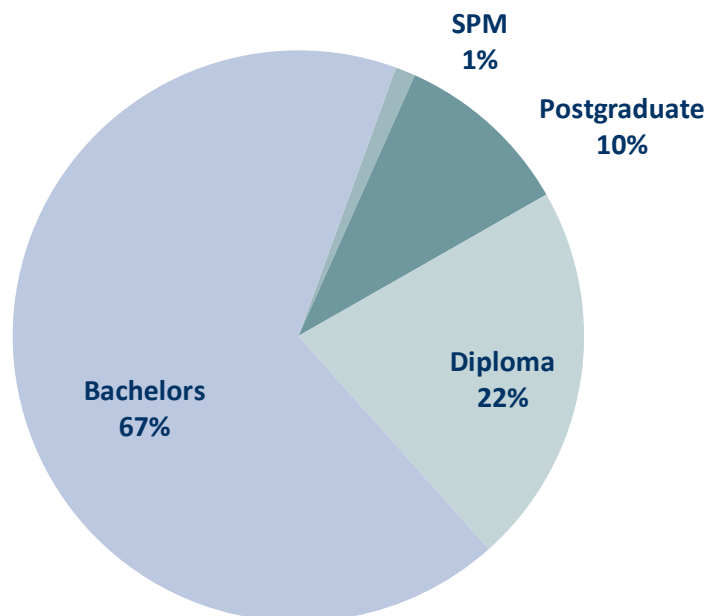
## ICT Manpower Profile

### Years of Experience

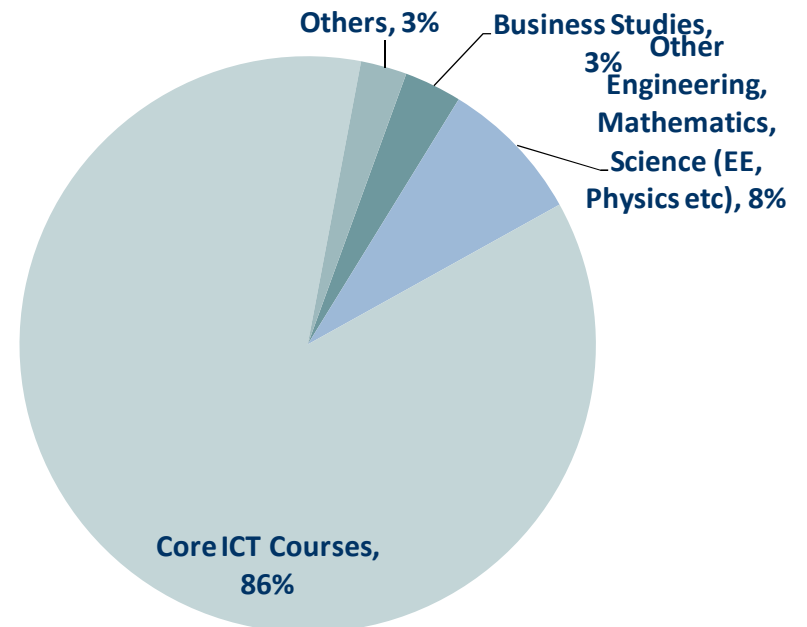


- Almost half of ICT workforce > 2 years work experience
- Typically degree and above qualification in a 'Core' ICT discipline
- Interestingly, 6% of ICT employees hail from non-ICT related disciplines

### % of Respondent Companies Level of Qualification



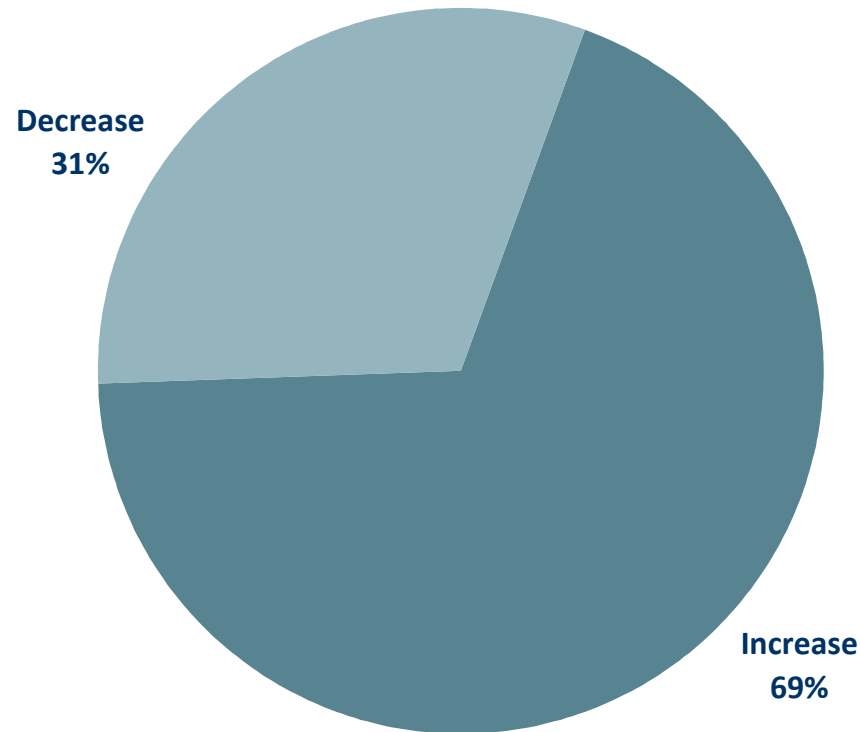
### Discipline of Study



# Demand Analysis - MSC Companies

## HR Metrics

Change in ICT manpower (Jan08-Dec08)

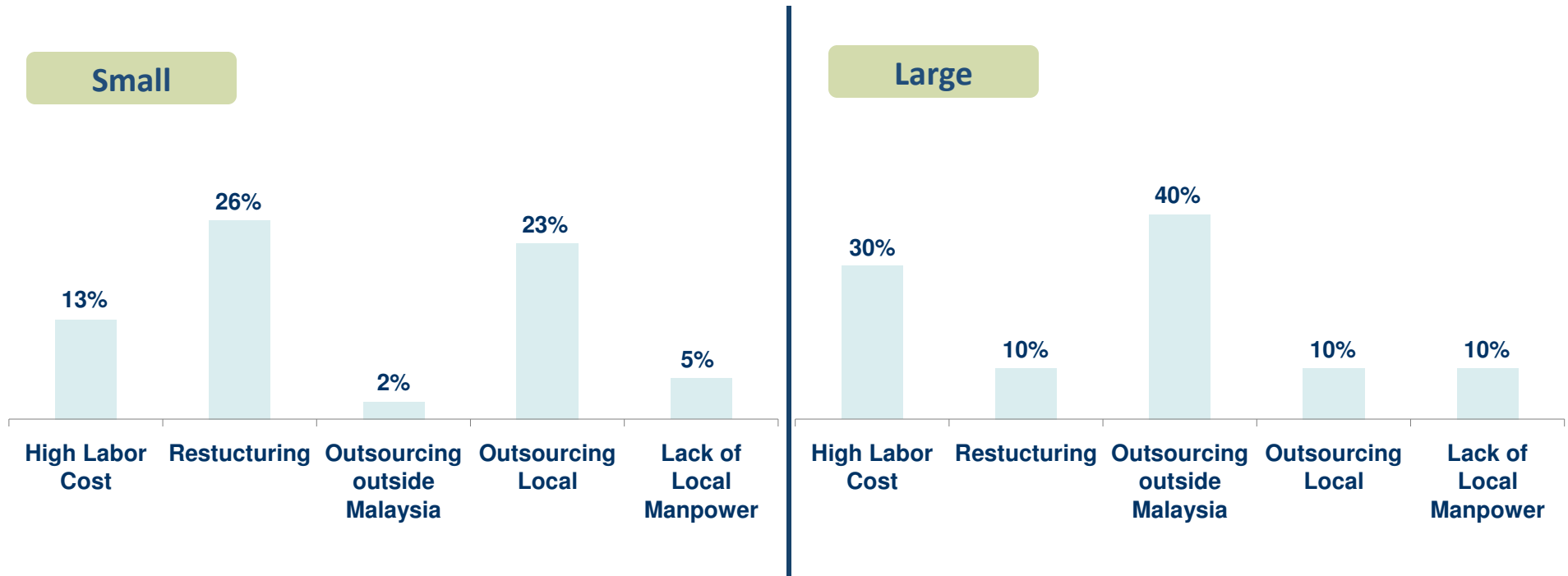


Even in the face of the tough economic climate, majority of MSC companies increased ICT workforce over 2008

# Demand Analysis - MSC Companies

## By Company Size

### Reasons for Decreasing Manpower (Jan08-Dec08)



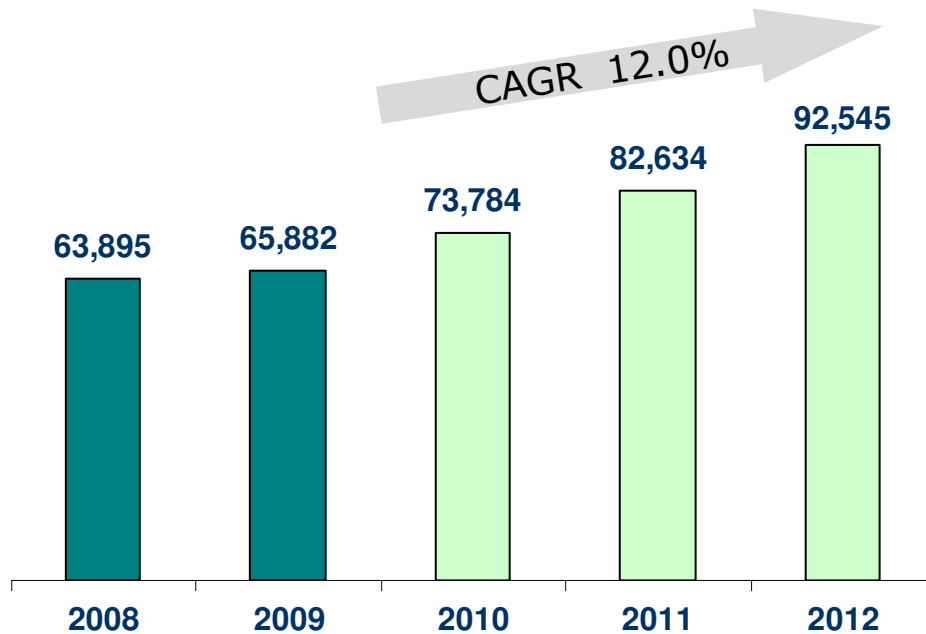
Outsourcing a common thread among companies that decreased manpower, as they look for ways to streamline business processes and cut costs

*'Small' = Annual Turnover less than RM 5 million. 'Large' = Annual Turnover greater than RM 100 million*

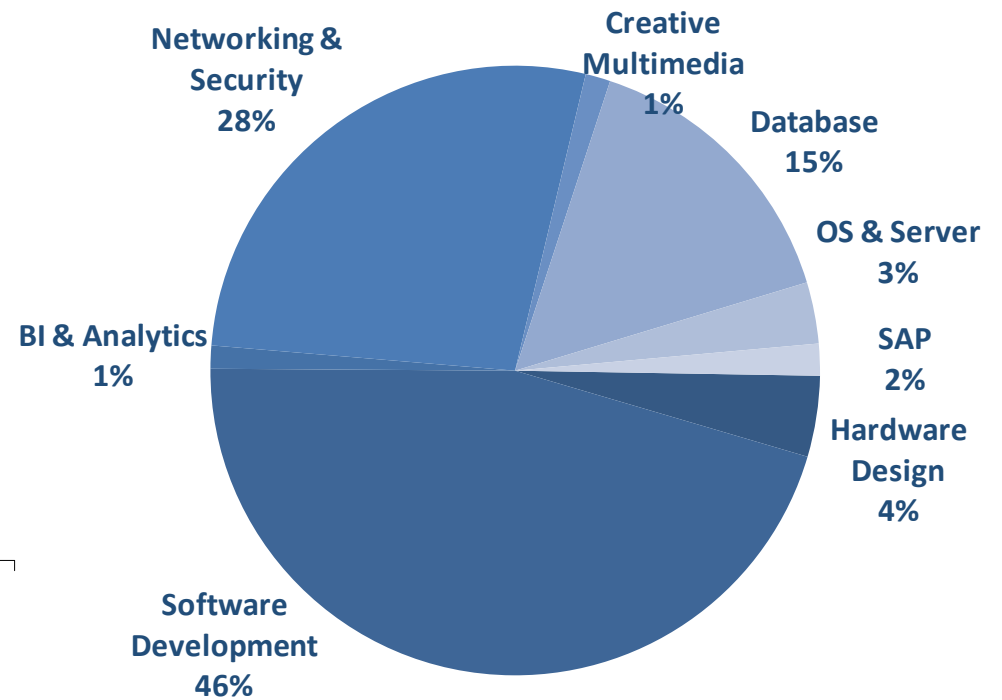
# Demand Analysis - MSC Companies

## By Skill Sets

### ICT Demand Projection



### 2009 Skill Level Split



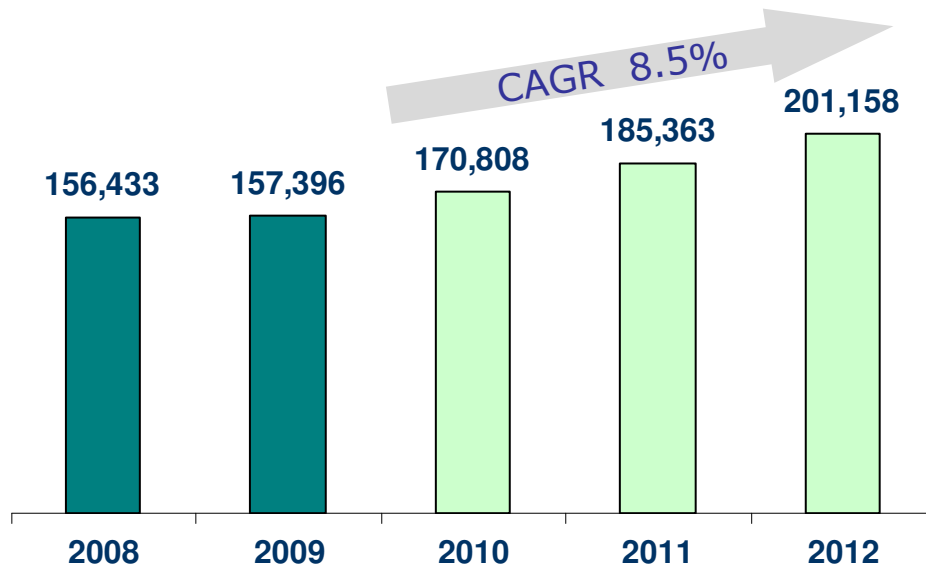
MSC to outperform overall industry in recruitment of ICT workforce over forecast period

Software Development and Networking & Security top skill areas

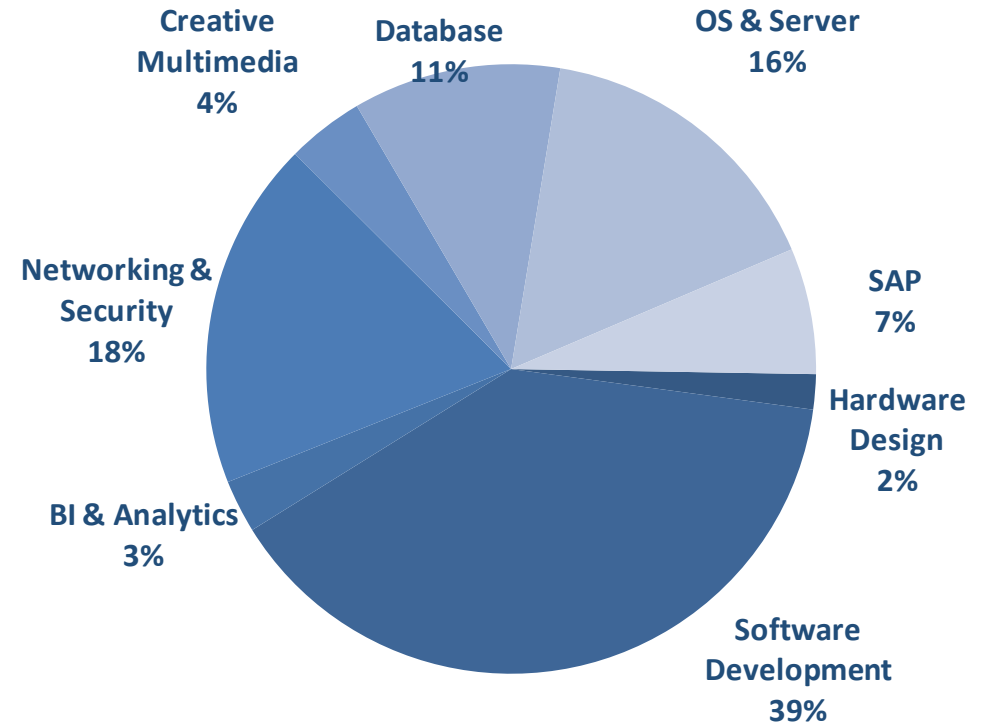
# Demand Analysis - Non-MSK Companies

## By Skill Sets

### ICT Demand Projection



### 2009 Skill Level Split



While showing positive growth, Non-MSK companies to lag MSK companies in terms of ICT workforce growth over the forecast period

Software Development and Networking & Security top skill areas

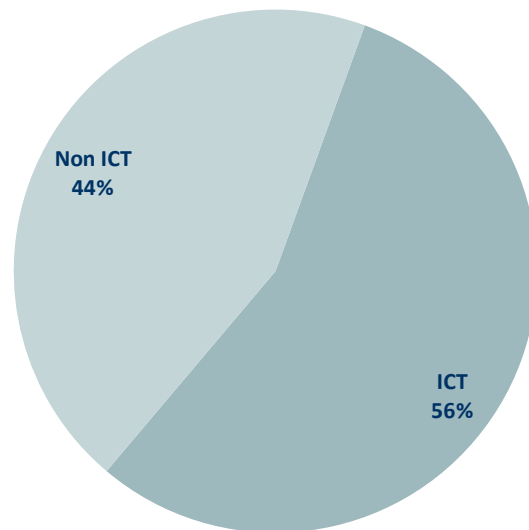
# Demand Analysis - MSC vs. Non-MS C

## Key Comparisons from Survey Analysis

### Core Employee Role

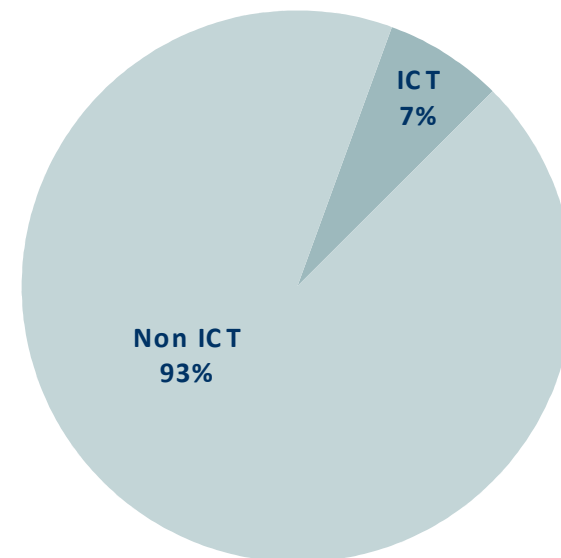
MSC

#### Core Employee Role



Non-MS C

#### Core Employee Role



**Proliferation of ICT employees in MSC companies since ICT is a core business activity for them**

**ICT serves a support role for most Non-MS C companies where core business activities are non-ICT related (Logistics, BFSI, Manufacturing etc)**

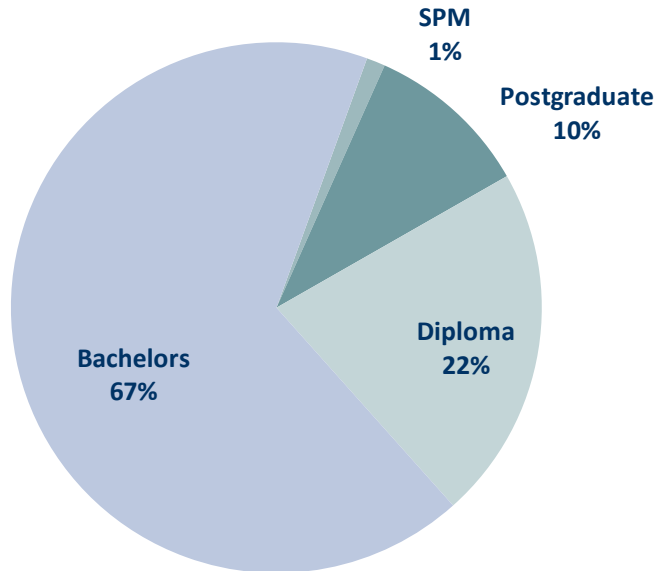
# Demand Analysis - MSC vs. Non-MSC

## Key Comparisons from Survey Analysis

### Level of Qualification for ICT Employees

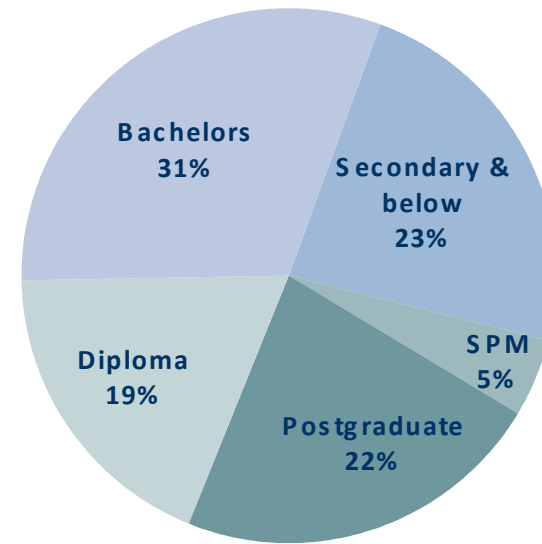
#### MSC

##### Level of Qualification



#### Non-MSC

##### Level of Qualification



Proportion of employees with Degree & Above qualifications is much higher for MSC companies, indicative of the more specialized and qualified requirements for ICT roles in MSC companies vis-à-vis in Non-MSC companies

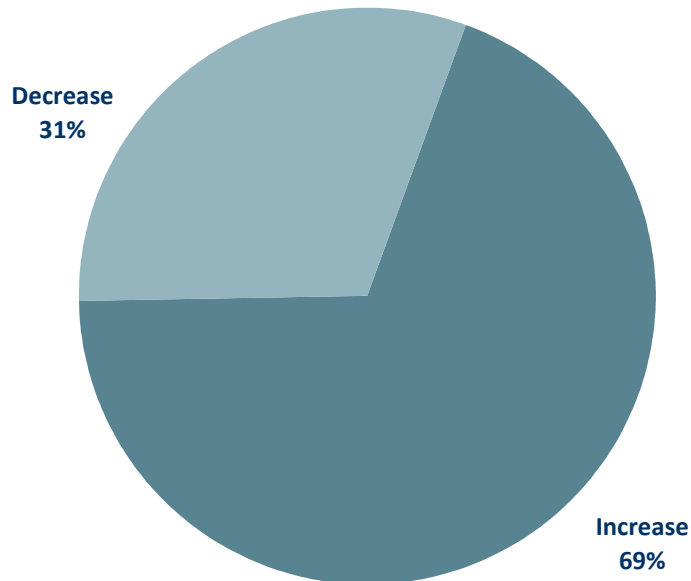
# Demand Analysis - MSC vs. Non-MS

Key Comparisons from Survey Analysis

## Change in ICT Manpower (Jan08-Dec08)

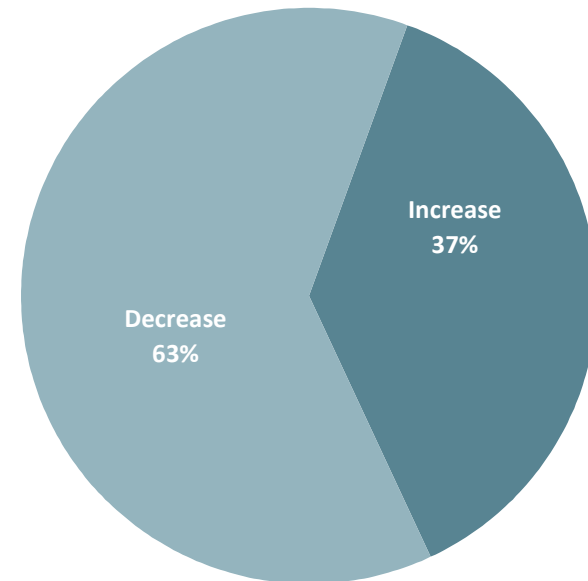
MSC

Change in ICT manpower (Jan08-Dec08)



Non-MS

Change in ICT manpower (Jan08-Dec08)

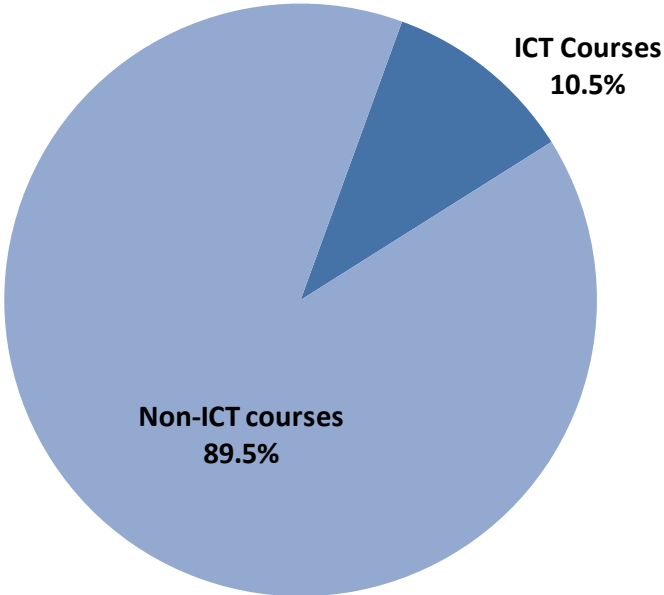


Telling manifestation of the strategic role that ICT plays in MSC companies. Non-MS companies are more willing to allow hiring freezes or shrinkages in ICT workforce in these testing times

# Supply Side Analysis – Student Demographics

Profile of Students at surveyed institutes

## Courses Enrolled

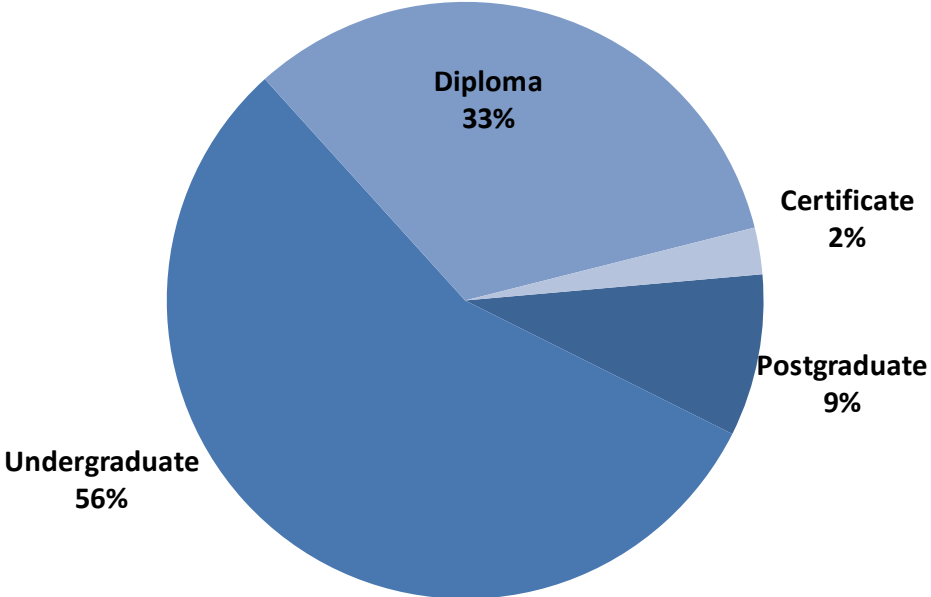


10% of total students across disciplines currently enrolled in ICT courses

Total Enrolment at Respondent IHLs: 320,000

65% of the current ICT students enrolled in Degree & Above courses

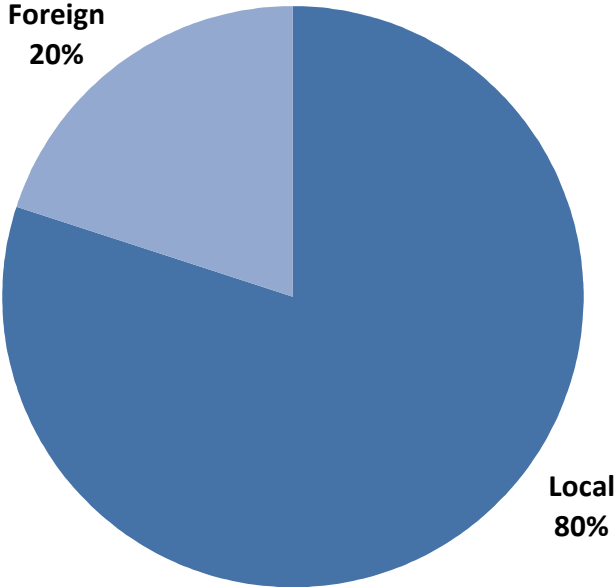
## Level of qualification



# Supply Side Analysis – Student Demographics

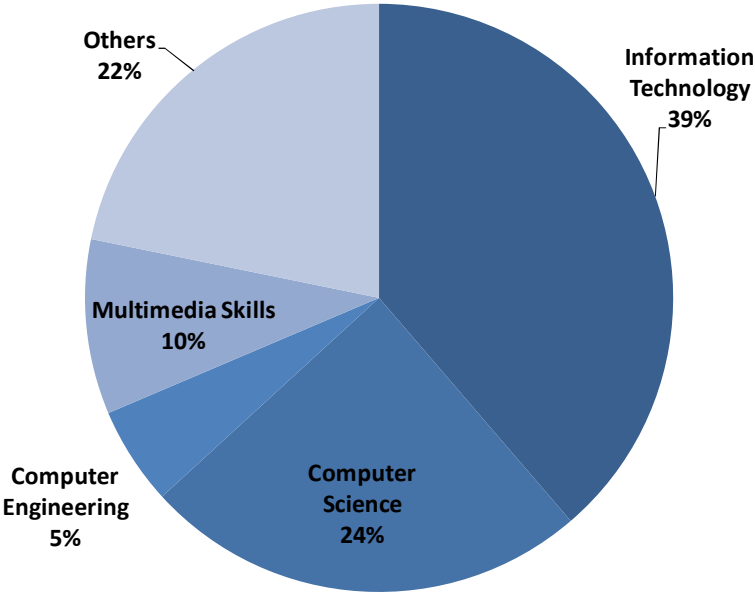
Profile of Students at surveyed institutes

## Local vs. Foreign students



A significant 20% of the current ICT cohort is from outside Malaysia

## Discipline of Study

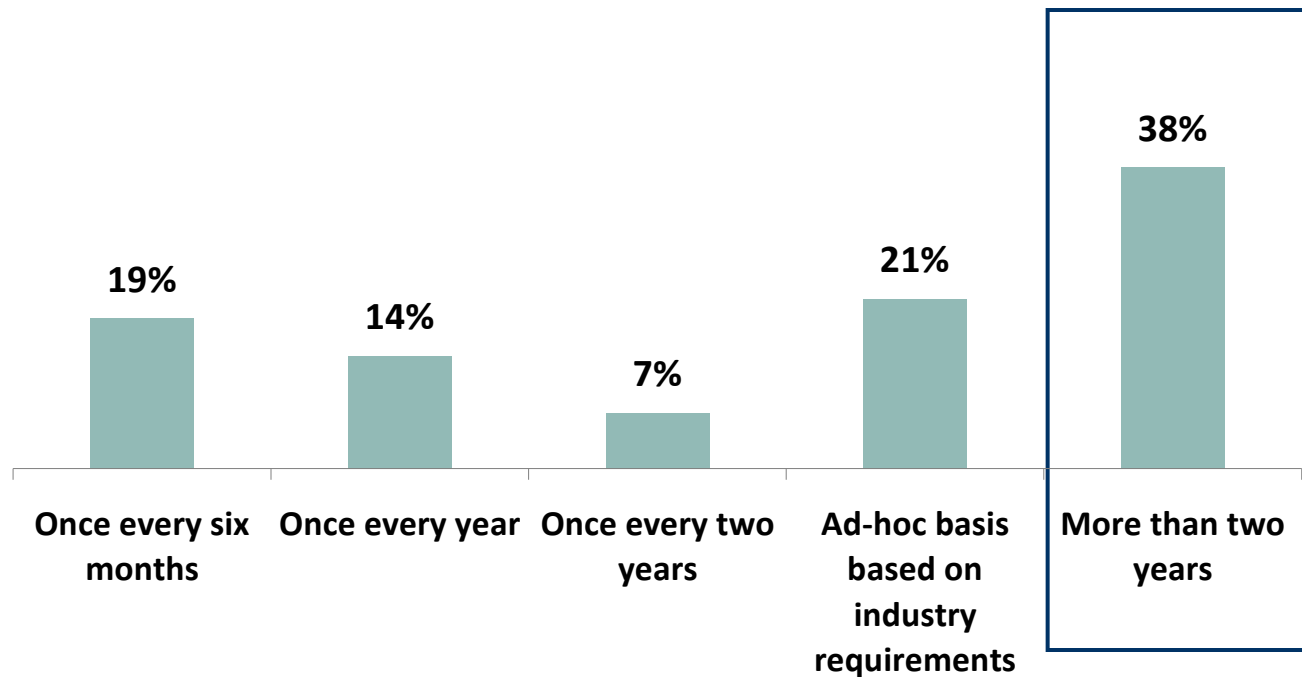


‘Others’ include such programs as Games Design, e-Commerce/Information Systems, Bio-informatics etc.

# Supply Side Analysis – Institute Metrics

## Curriculum Review

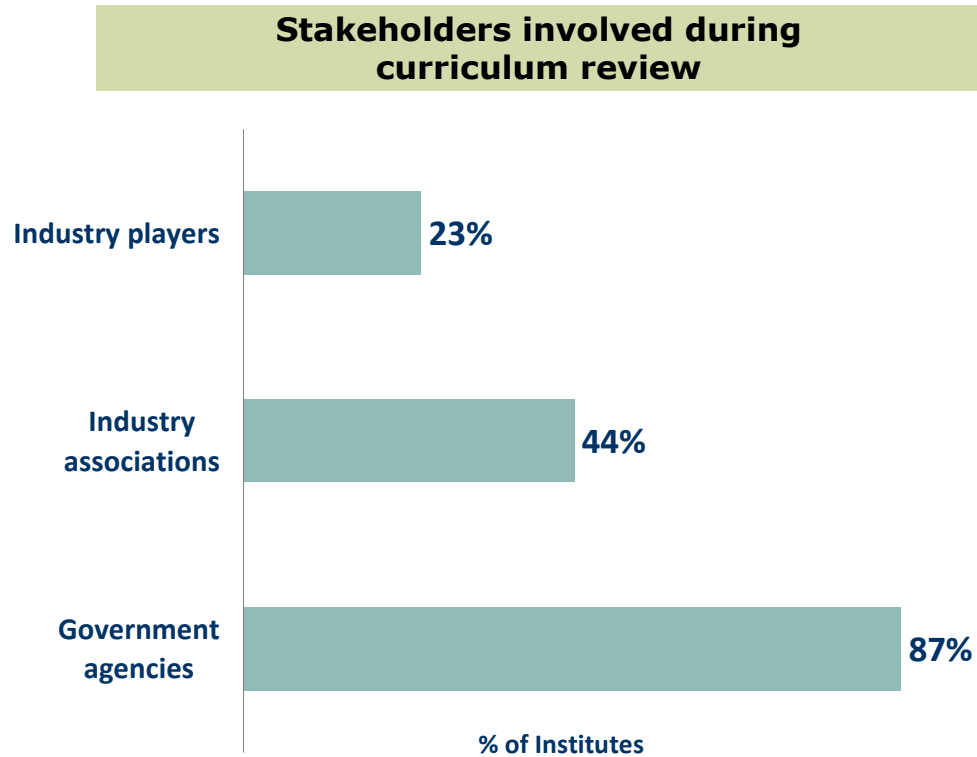
### Frequency of curriculum review



Given the dynamic and evolving nature of the ICT industry, it is disappointing to note that 38% of surveyed IHLs review their ICT curricula in more than 2 years  
IHLs with a review cycle of 6 months were mostly private institutes

# Supply Side Analysis – Institute Metrics

## Curriculum Review

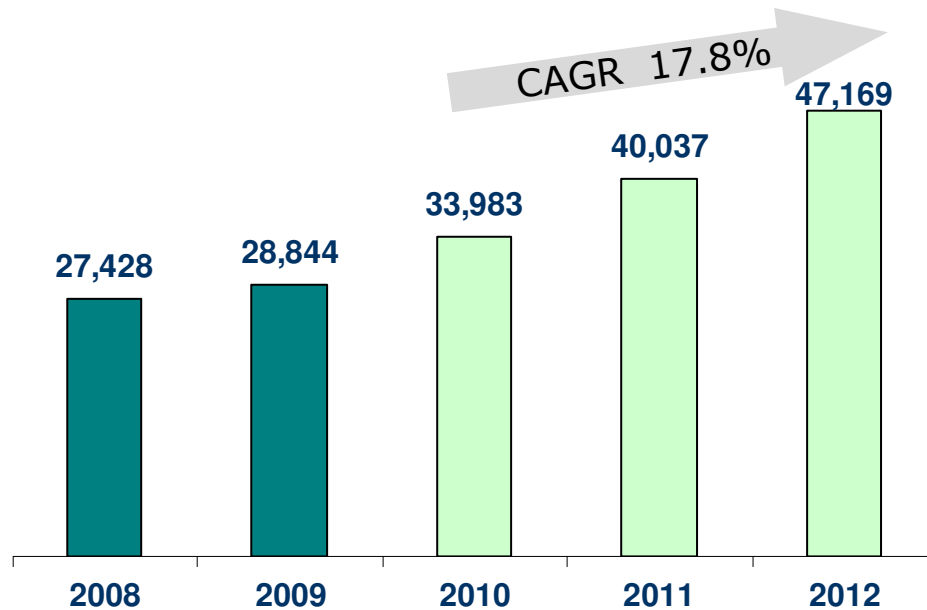


Low interaction with Industry players when reviewing ICT curricula would seemingly explain the perceived gap between industry expectation and graduates' competence

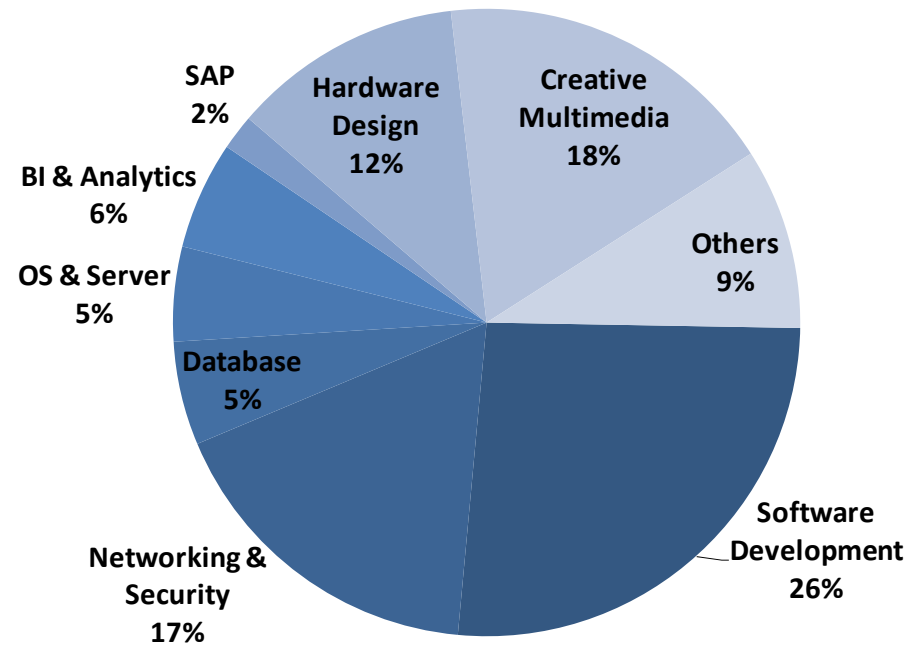
# Supply Side Analysis – Supply Projections

## Overall

ICT Graduates Projection



2009 Skill Level Split



**Aggressive plans to increase ICT student intake over the forecast period cited by respondent IHLs**

*Projections based on input provided by respondent IHLs on their plans to increase intake over the forecast period*

# Gap Analysis

## *Types of Gap*

Using the demand side and supply side analysis, we can identify gaps across 2 buckets – 1) In the manpower number required to meet the local demand for ICT human capital, and 2) the employability or employer satisfaction of the current ICT manpower



**MIND THE GAP**

### **Gap in Manpower Demand & Supply**

**1**

*What is the shortfall of manpower required to meet the demand?*

*Which skill areas are expected to face a manpower crunch in the next 3 years?*

### **Gap in Employer Satisfaction of ICT Manpower**

**2**

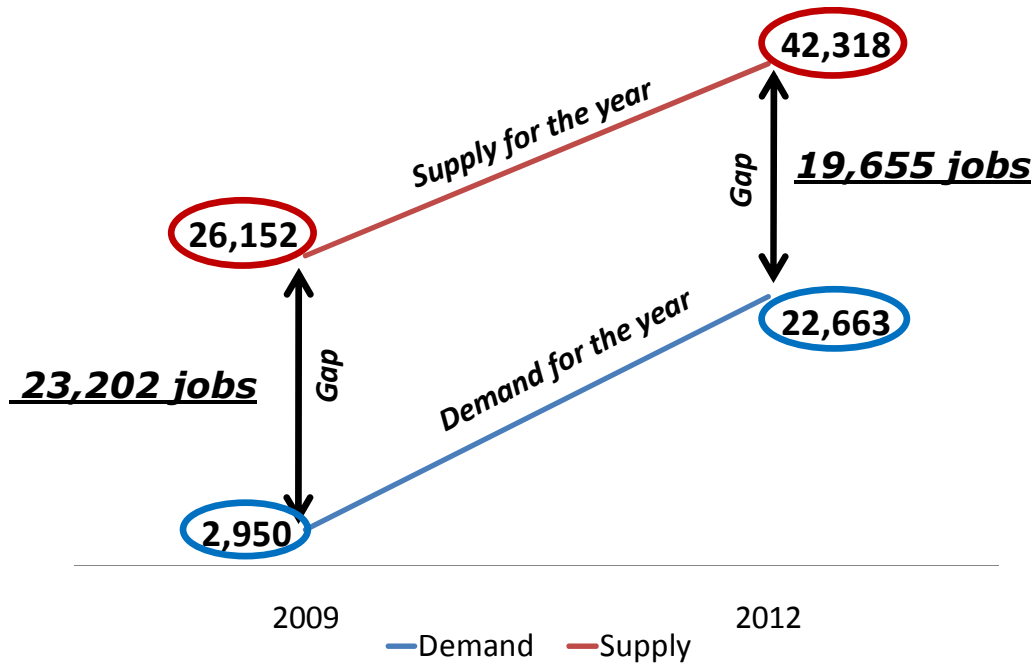
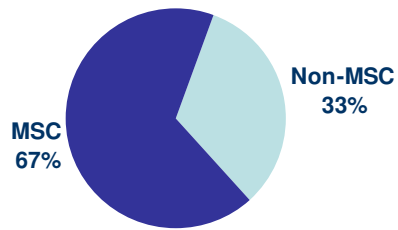
*Which skill areas are falling short on employee satisfaction hence requiring more focus on quality of manpower and degree of qualification?*

# Gap Analysis

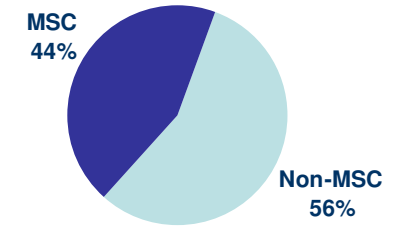
Shortfall of Manpower – Overall (Scenario 1)

## Overall Manpower Shortfall

2009 Incremental Demand



2012 Incremental Demand



Note: Gap = Supply - Demand

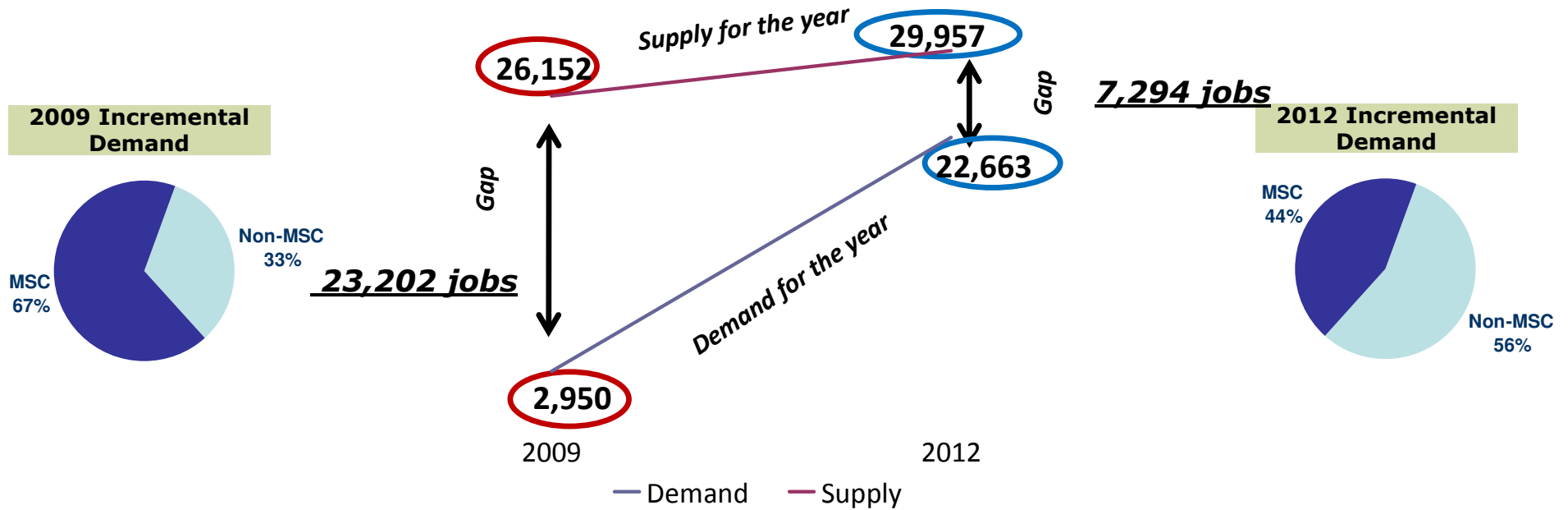
### Scenario 1

Supply includes ALL ICT graduates and forecasted based on growth estimates provided by the respondent IHLs

# Gap Analysis

## Shortfall of Manpower – Overall (Scenario 2)

### Overall Manpower Shortfall



**Note: Gap = Supply - Demand**

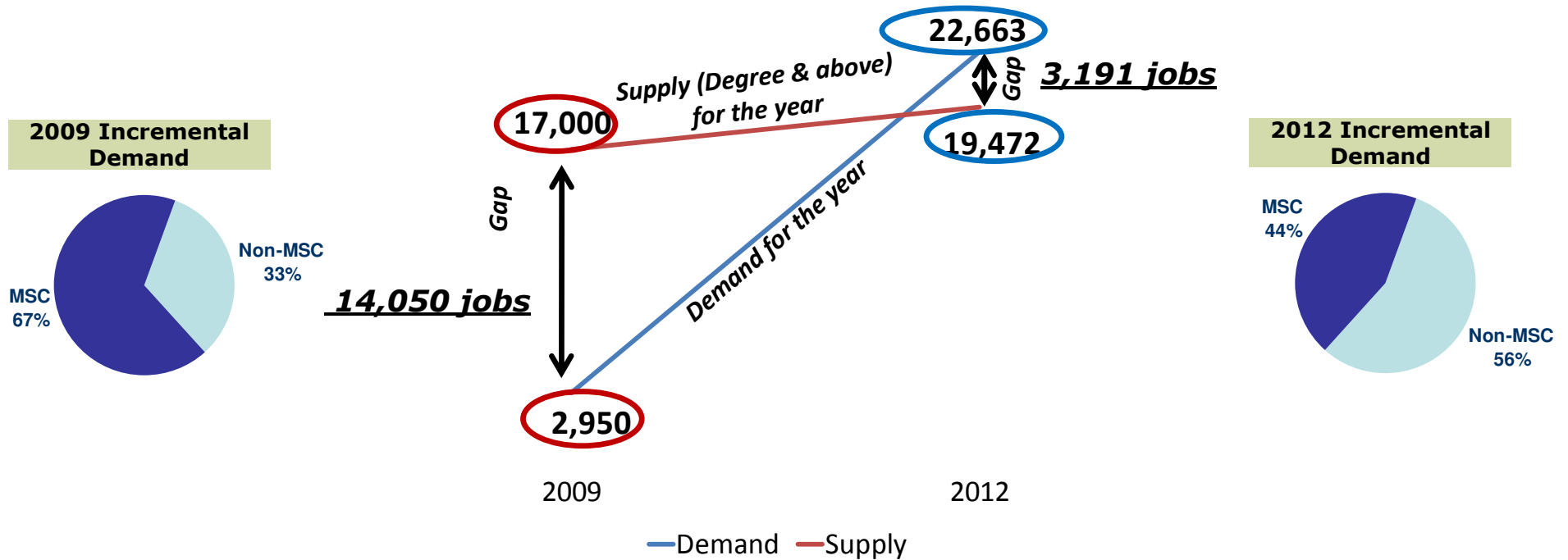
### Scenario 2

Supply includes ALL ICT graduates and forecasted based on historical growth of ICT graduates from local IHLs over 2005-2007

# Gap Analysis

## Shortfall of Manpower – Overall (Scenario 3)

### Overall Manpower Shortfall



**Note: Gap = Supply - Demand**

### Scenario 3

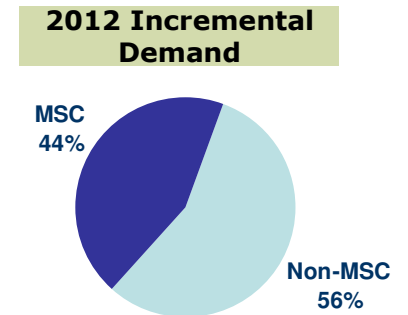
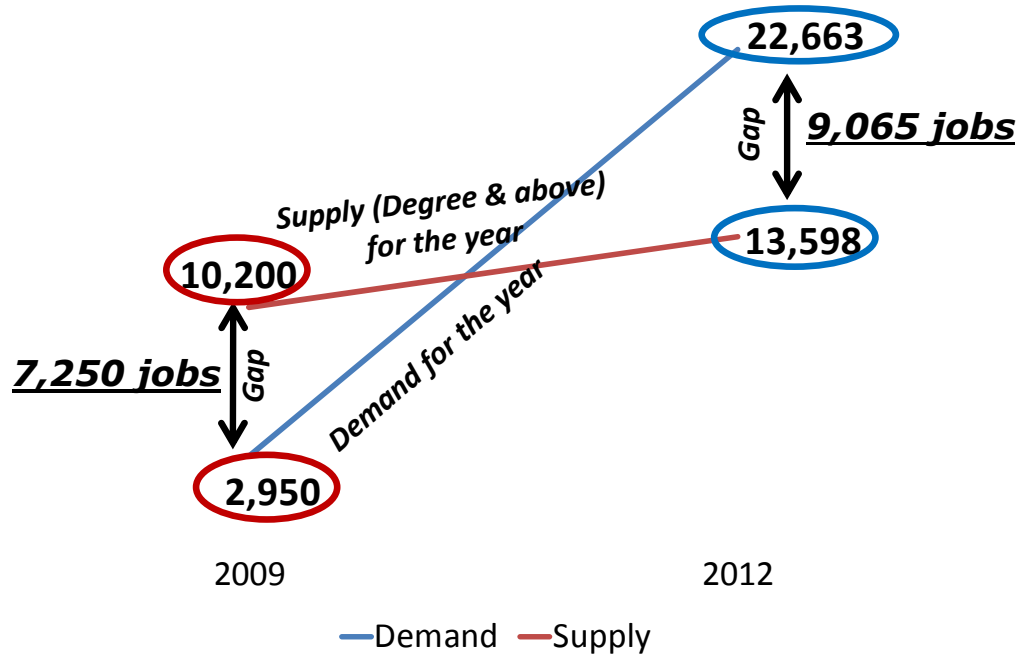
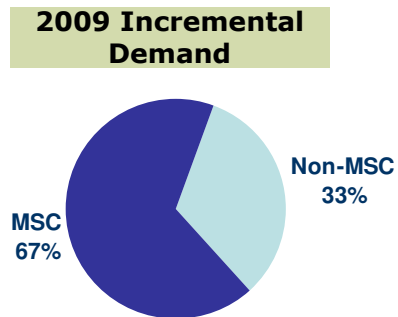
Supply includes ICT students graduating with at least Degree and forecasted based on historical growth of ICT graduates from local IHLs over 2005-2007

# Gap Analysis

## Shortfall of Manpower – Overall (Scenario 4)

Employability ~60%

### Overall Manpower Shortfall



**Note: Gap = Supply - Demand**

### Scenario 4

Supply includes ICT students graduating with at least Degree, forecasted based on historical growth of ICT graduates over 2005-2007, and modified to factor in employability

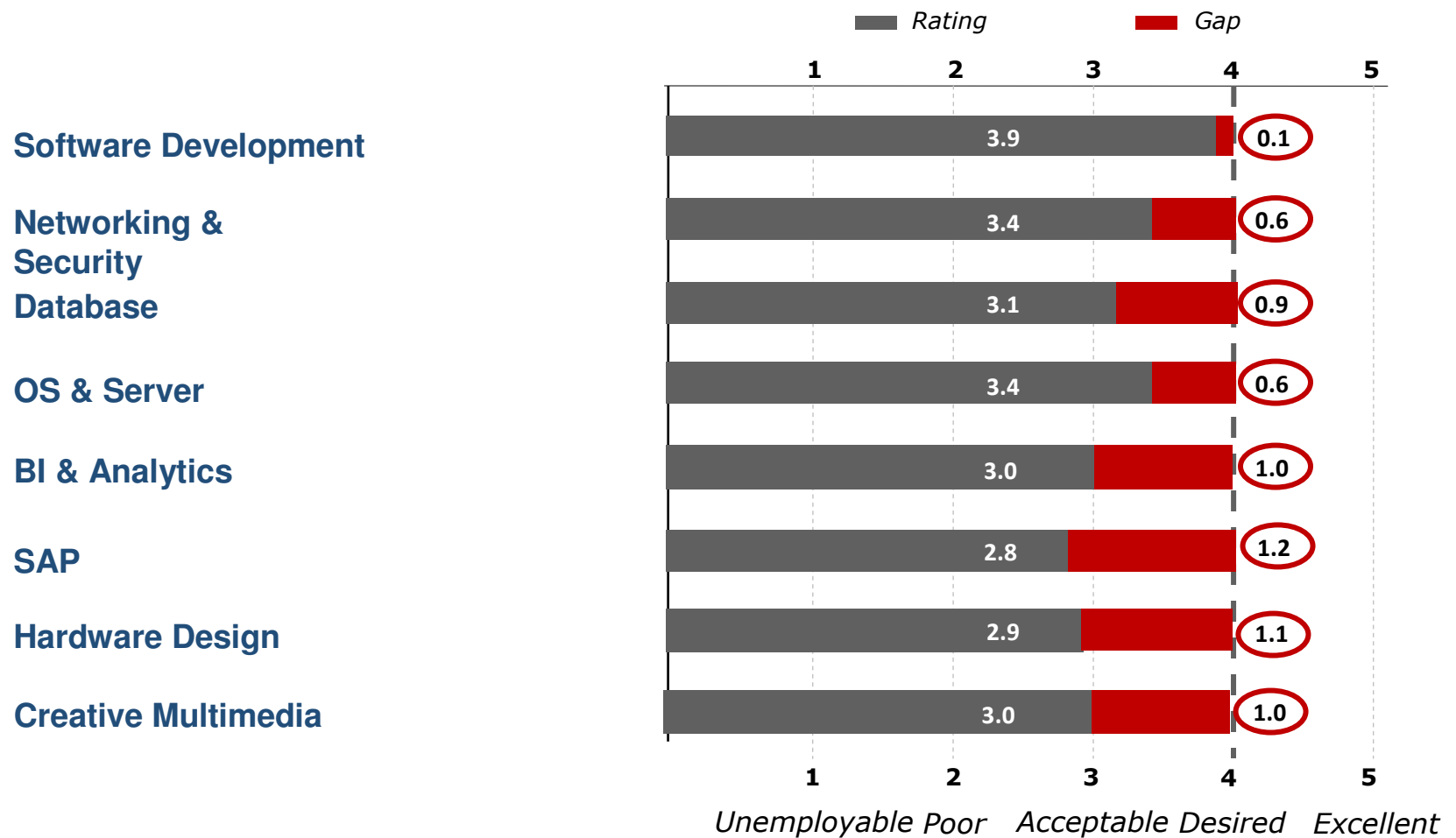
# Gap Analysis

## Employer Satisfaction with ICT Employee Skills

### Employer Satisfaction Gaps by ICT Skill Categories

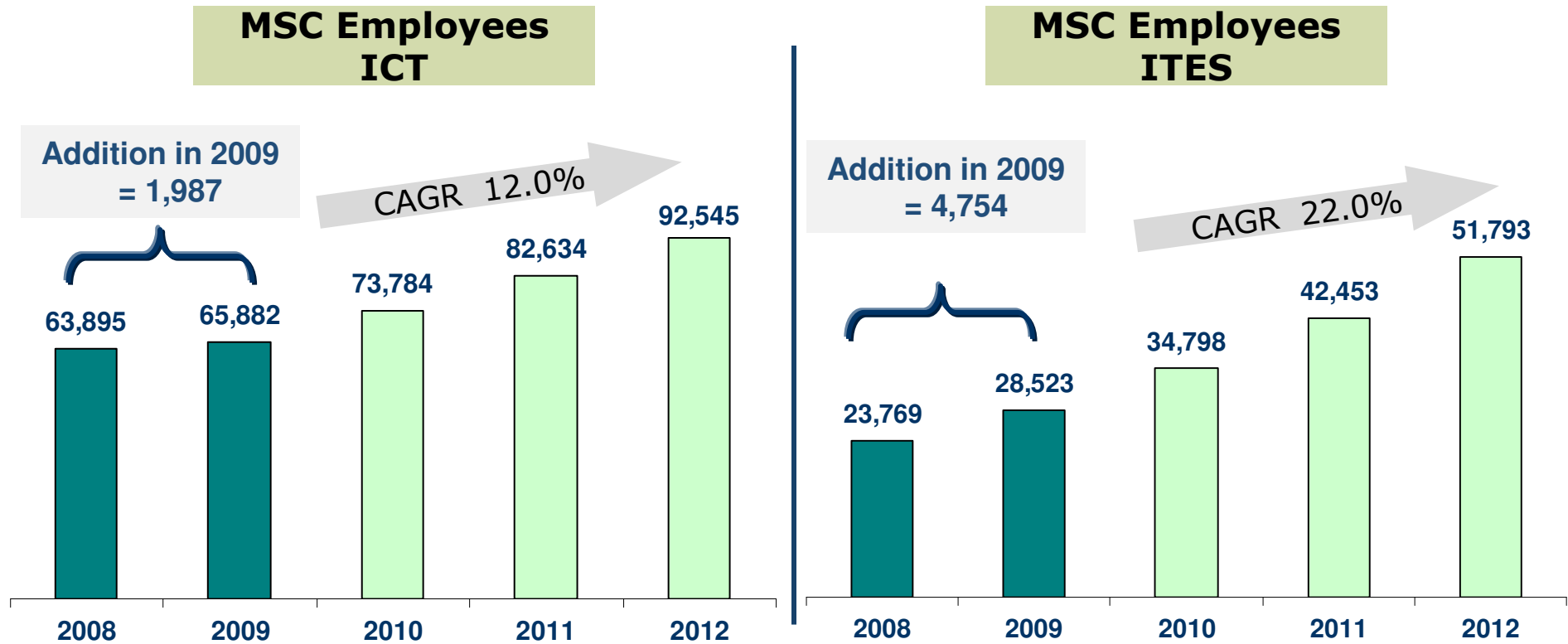
#### Skill Category

#### Gap in Employer Satisfaction



# MSC Analysis

Total Employees – ICT + ITES employees

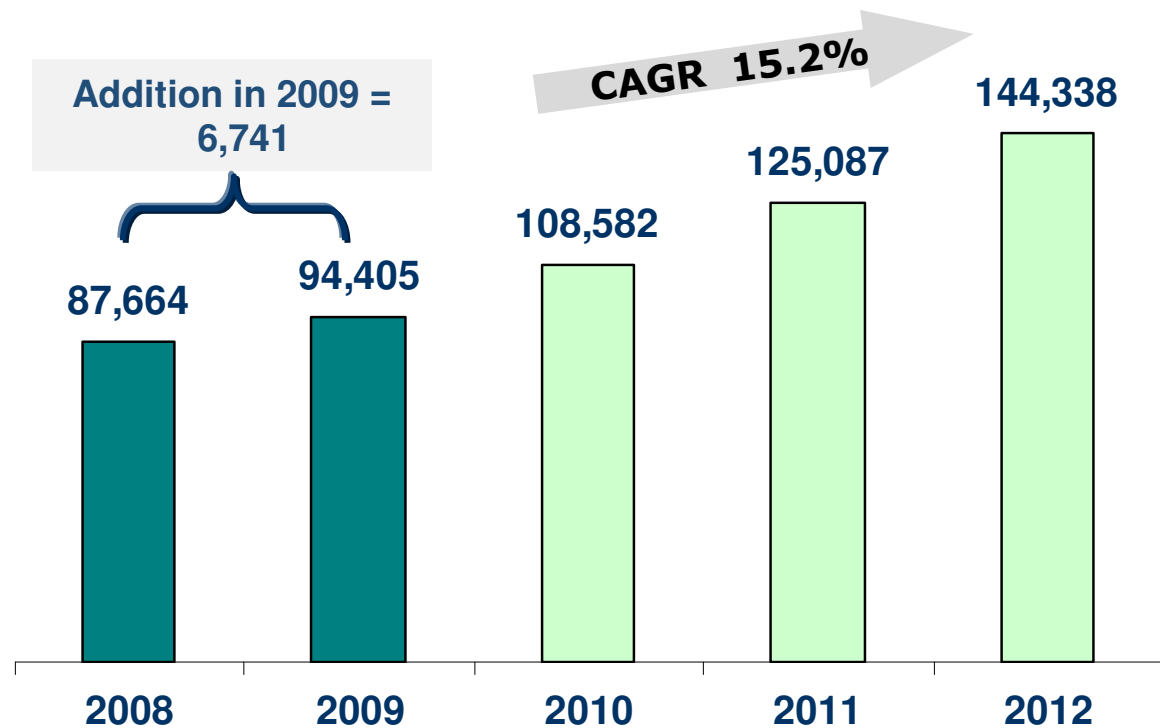


In the light of the tough economic climate over the last year, the MSC cluster performed impressively, creating 6,741 fresh jobs over 2008-2009. As the economy recovers, the MSC growth story is poised to continue

# MSC Analysis

Total Employees – ICT + ITES employees

## MSC Employees (ICT+ITES)



In the light of the tough economic climate over the last year, the MSC cluster performed impressively, creating 6,741 fresh jobs over 2008-2009. As the economy recovers, the MSC growth story is poised to continue

# Demand Analysis – MSC Companies

## Snapshot of Demand

### ICT Employee Strength by Skill Categories

<u>Skill Category</u>	<u>ICT Employees 2008</u>	<u>ICT Employees 2009</u>	<u>ICT Employees 2012</u>	<u>Incremental Demand (2010-2012)</u>	<u>CAGR 2012</u>
Software Development	32,553	30,006	41,037	11,031	11.0%
Networking & Security	16,772	18,046	26,736	8,690	14.0%
Database	6,813	10,069	14,146	4,077	12.0%
OS & Server	2,573	2,147	2,781	634	9.0%
BI & Analytics	631	808	1,135	327	12.0%
SAP	506	1,112	1,782	669	17.0%
Hardware Design	3,082	2,817	3,451	634	7.0%
Multimedia Tools	964	877	1,477	601	19.0%
IT-Enabled Services	23,769	28,523	51,793	23,270	22.0%

## Key Takeaways

1

Certain scenarios for the demand and supply situation in Malaysia bring up an over-supply of ICT graduates. This over-supply however should be considered in the light of the fact that employers deem graduates from local IHLs to be lacking in quality and not all employable

2

Curricula in local IHLs are perceived by employers to not be aligned with the requirements of the industry

3

As ICT is transcending its role from just a support function to a business enabler, there is an increasing and as yet unmet demand for ICT graduates that are well-equipped in business/communication skills

4

The MSC cluster has performed impressively in the light of the tough economic times over the last year, with SSO as the chief growth engine

5

The MSC cluster is poised to add 50,000 new knowledge workers over the next three years (2010-2012)

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**Global Growth Consulting Company**