

Adaptation of Modern Consumer Technology for Disaster Management and Mitigation

R.T. Thrimawithana

Zebra technologies Lanka Pvt Ltd

R.N. Gamachchige

Department of Geography

Faculty of Humanities and Social Sciences

University of Sri Jayewardenepura

Introduction

Disaster mitigation and Disaster management

Complex and Hard

- *unpredictability*
- *lesser availability in estimations*

Conventional Systems

- **Disaster awareness**
 - *Television messages, radio messages, newspapers notifications, public notifications and public announcements, etc..*
- **Disaster identification**
 - *conducting researches and other sophisticated mechanisms such as satellites and weather analysis*

Why need new system

- **not effective due to**

- *availability,*
- *trustworthiness,*
- *relevantness*
- *power of communication*

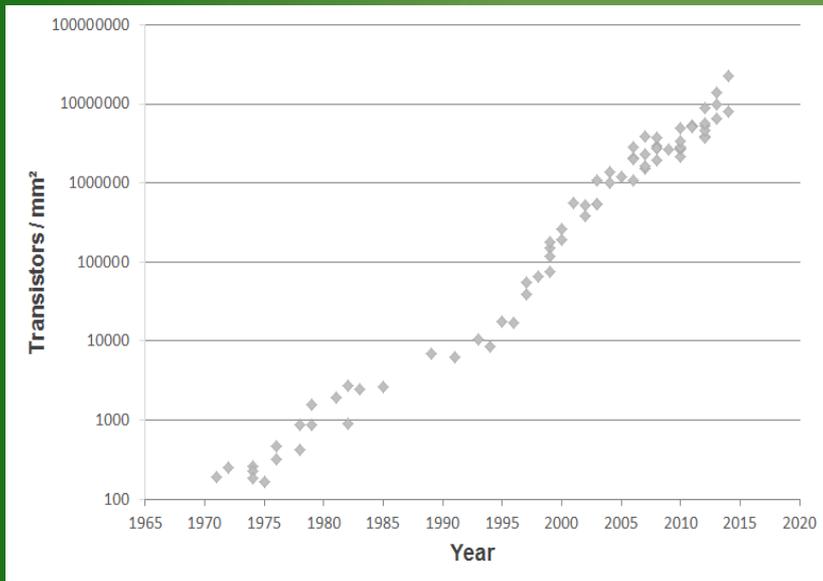
- **expensive due to**

- *lack of knowledge on geographic insight*
- *sociological insight of the relevant victims*

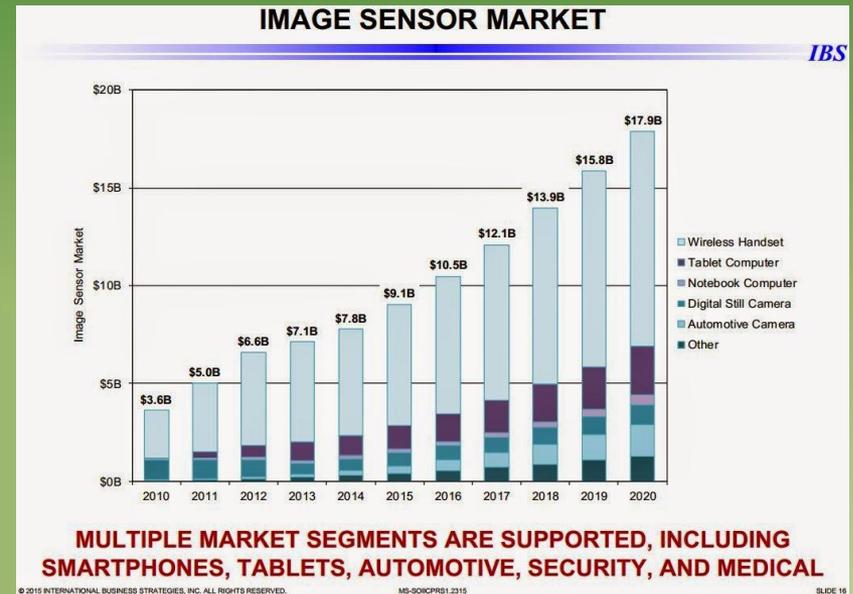
The New System

- *Wanted:*
 - *New Source of micro level data collection mechanism*
- *Data and Information:*
 - *Weather conditions*
 - *Climate conditions*
 - *Geographical measures*
 - *Sociological measures.*
- *Preferable*
 - *Cheap*
 - *Reliable*

The Trends



Graph: Transistor/mm² vs Time



Graph: image sensors market vs Time

“A Solution”

- *could be the consumer mobile phone?*
 - *Has communication*
 - *Has sensors and actuations*
 - *Has micro level*
 - *Has Sociological measures*
 - *Has Geographical measures*

Other benefits

- *Already well established*
- *Available almost everywhere*
- *Self evolving*

Benefits of the new system

- **Disaster identification**
 - *Identify natural anomalies*
 - *Validations*
 - *New patterns and trends*
- **Disaster awareness**
 - *Direct method*
 - *Lowest cost*
- **Disaster mitigation, recovery and rescues**
 - *Fast locating*
 - *Social and geographical information availability*
 - *High level of Predication accuracy*

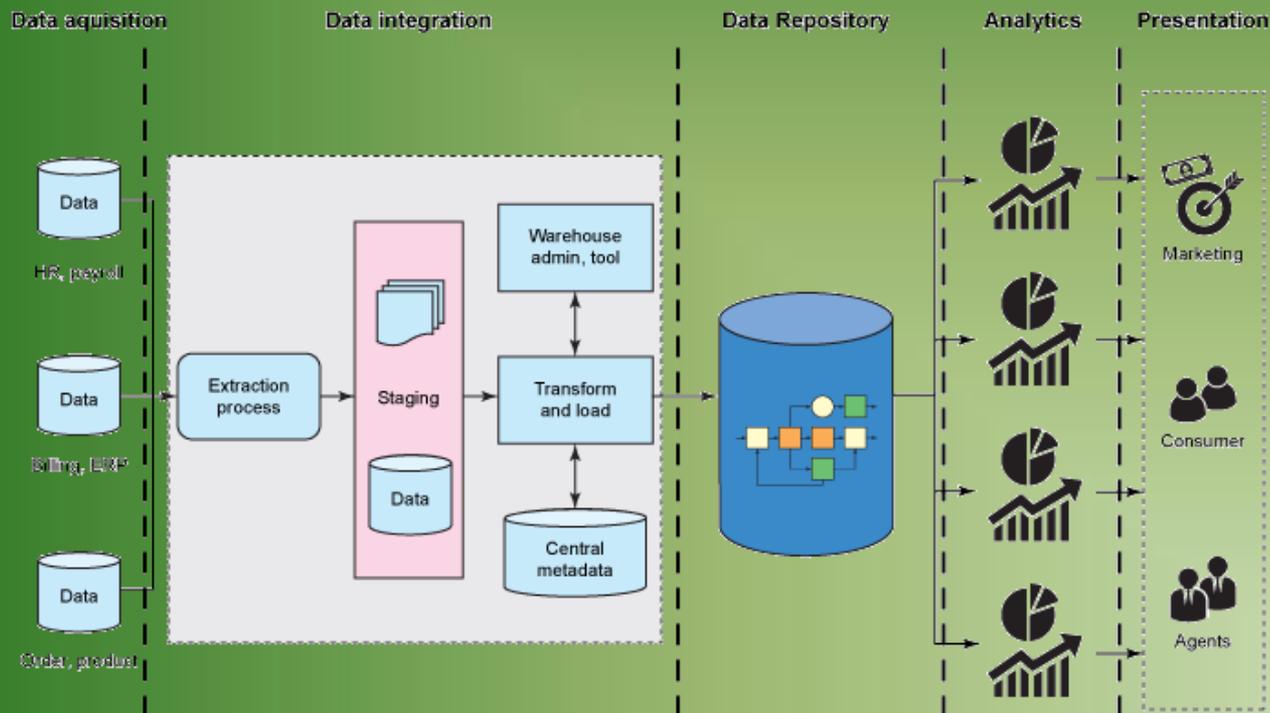
New micro level data Agent

- *A single data source*
 - *more complex*
 - *Not reliable*
- *Multiple data sources*
 - *Can eliminate nuisances*
 - *more reliable*

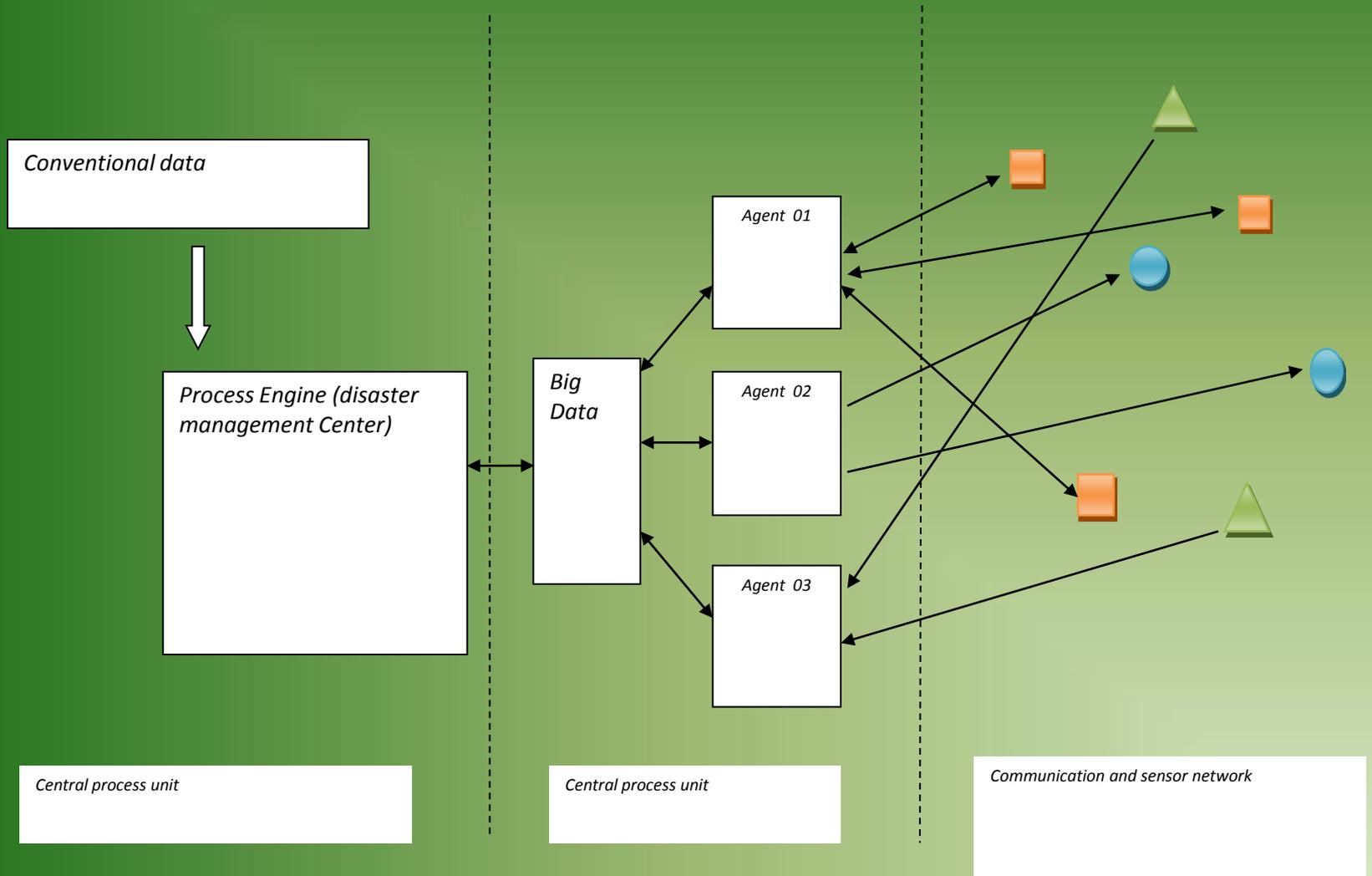


Data Storage Mechanism

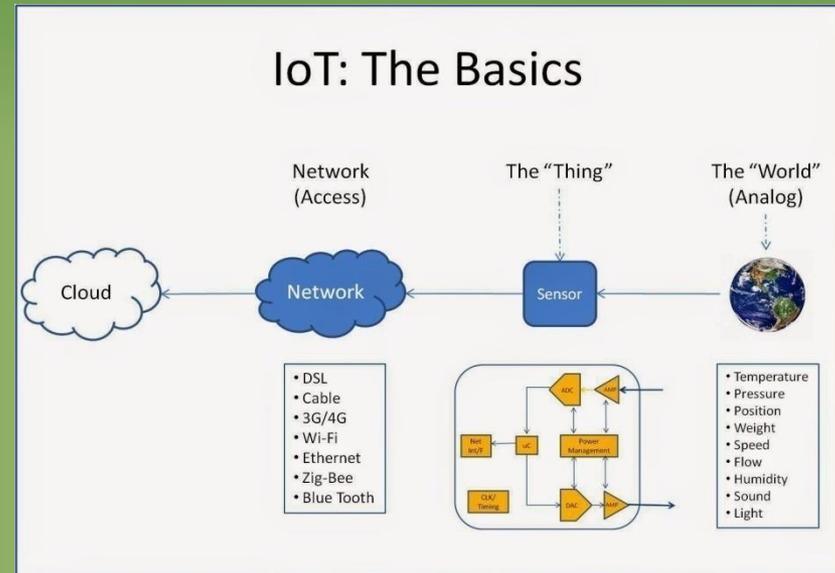
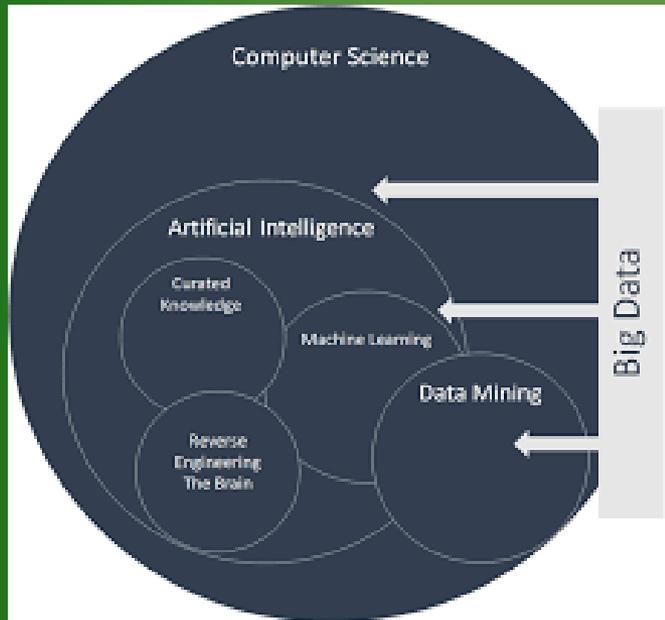
- *Can Big Data help ?*



The New System



The New System....



Discussion

- **Capabilities**
 - *Minimum cost*
 - *Minimum maintenance*
 - *Co-exist with current system*
- **Apart from disaster management**
 - *micro level data or information*
 - *confidentiality*
 - *trustful manner*

Thank you!