

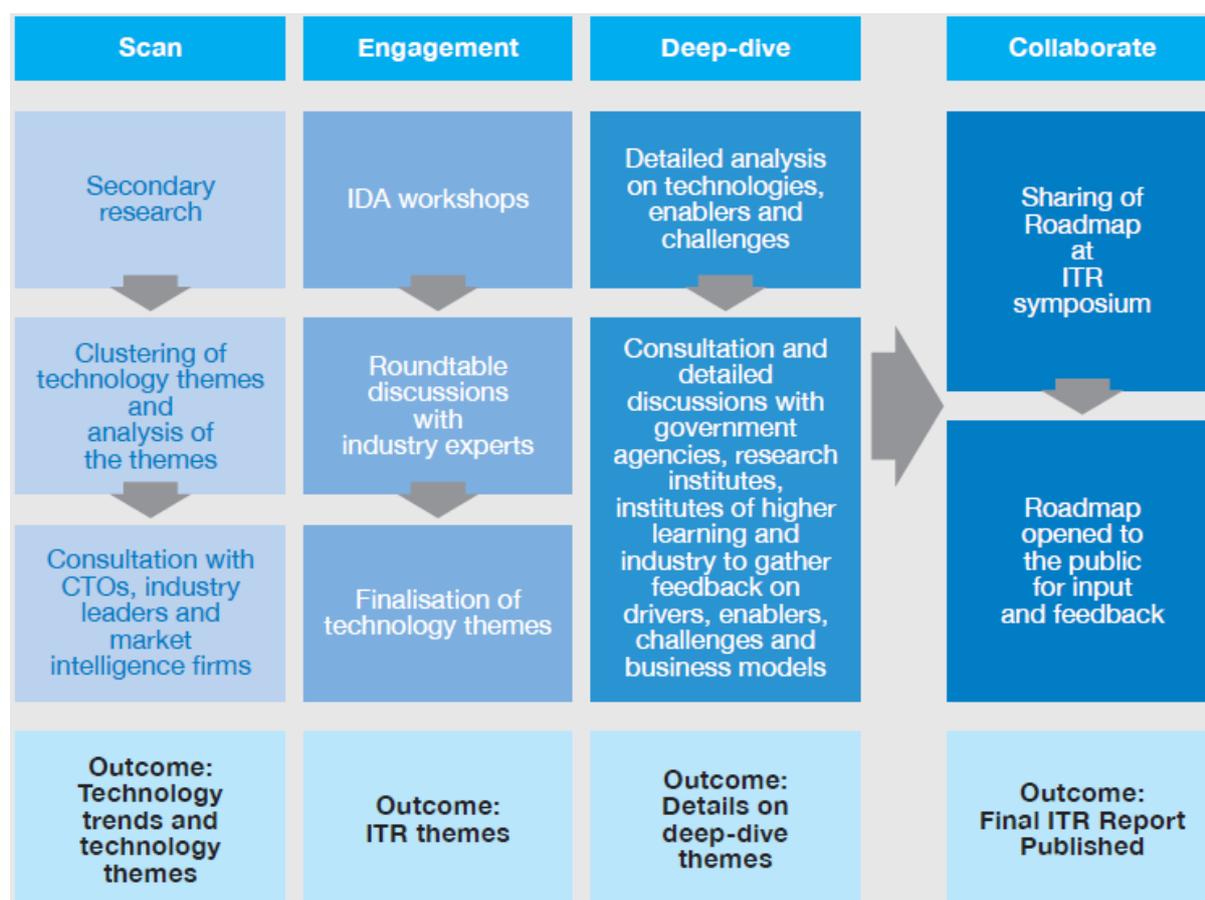
### 3 Overview of ITR

#### 3.1 Methodology

This ITR report covers nine key themes that are shaping the ICT landscape. These nine themes are selected due to their importance to the ICT landscape, as well as their potential impact on Singapore’s economy and society.

The ITR adopts a systematic process to ensure that the most relevant themes are selected and presented in this report. The process is broken down into four phases in chronological order, namely ‘Scan’, ‘Engagement’, ‘Deep-dive’, and ‘Collaborate’.

The four phases are illustrated below:



During the ‘Scan’ process, an objective approach was taken to scan for various indicators of bubbling technology trends in the ICT landscape. A list of important trends and technologies was then compiled. Next was the ‘Engagement’ phase, during which opinions on the shortlisted themes were actively sought from IDA staff and industry experts. After a series of discussions, the nine themes were finally selected. The third stage is the ‘Deep-dive’ phase, during which each theme lead performed an in-depth research of his designated theme and collated feedback from government agencies, research institutes, institutes of higher learning and the industry to gain a deeper understanding of each theme’s impact on the global and local landscape.

We are currently in the 'Collaborate' phase. At this stage, the ITR symposium is a platform to share and gather valuable feedback and insights from the public, hence the ITR 2012 motto - "Co-creating the Future".

## **3.2 The Nine ITR Themes**

Below are short descriptions of each of the nine themes. These short descriptions should provide a clear overview of each theme and help you keep up with the discussions at the symposium.

### **3.2.1 Big Data**

Driven by the rapid increase in number of people and devices connected to the Internet, data is growing at a phenomenal rate. The amassed data pool contains hidden insights which give governments and enterprises the opportunity to understand the behaviours and opinions of their targeted interest groups. New technologies have to be adopted to manage the data deluge and extract these insights before more effective business models and policies can be formulated.

### **3.2.2 Cloud Computing**

Cloud computing is an orchestration of various technologies enabling, but not limited to, multitenancy, automated provisioning and usage accounting, the Internet and other connectivity technologies like richer Web browsers to realise the vision of computing delivered as a public utility. Cloud elasticity affects an organisation's bottom line by improving efficiency and influences the topline of the business by allowing low-risk experimentation, innovation, and improving turnaround time. In the long term, IT agility enabled by cloud computing will transform the business landscape.

### **3.2.3 Cyber Security**

Cyber Security is increasingly a pertinent part of our lives as we become ever more connected. With cyber attacks becoming better orchestrated and more sophisticated globally, continuous innovation is necessary to provide a secure environment for individuals and enterprises to operate in. To understand the rapidly evolving landscape of Cyber Security, we must understand potential threats and the emergence and evolution of security technologies.

### **3.2.4 Internet of Things**

The boundary between the physical and the digital worlds is blurring with the prevalence of the Internet of Things (IOT) where potentially billions of objects are connected to the Internet. The pervasive connectivity of these physical objects enables multiple interactions that spur the creation of new intelligent services, improvement in information exchange and enhancement of quality of life.

### **3.2.5 ICT and Sustainability**

Our actions today will have an impact on the current environment and that of future generations to come. ICT can play an active role in enabling innovations to tackle various sustainability challenges. However, the ICT sector will also need to take actions to minimize its own social and environmental impacts.

### **3.2.6 Comms of the Future**

Convergence is bringing various technologies together, and enabling us to do things beyond our imagination. Communication is no longer confined to traditional voice or data. Mobile devices are empowering individuals to connect anytime, anywhere. The bandwidth of communication networks is also increasing to keep pace with data traffic growth.

### **3.2.7 Social Media**

A good understanding of the opportunities that arise from the evolution of social media will help organisations to engage the community more effectively and gain useful insights to improve their services or business models. It is thus essential for organisations to learn to tap on and manage interactions on various social media platforms so they will be in better stead to leverage the power of the masses to extend their influence.

### **3.2.8 New Digital Economy**

With the widespread adoption of social media and mobile technologies, the digital economy has entered a new phase of development, presenting unprecedented opportunities for future growth. These include the provision of direct access to mass consumer markets via mobile devices and the promotion of proactive consumer feedback to improve technology products. It will profoundly transform consumer-enterprise interactions, particularly the conduct of purchases in sectors such as retail and entertainment.

### **3.2.9 User Interface**

User interface and interaction technologies provide users with new ways to interact with data, systems and the environments in which we work, live and play. The paradigm shift in the concept of user interface, of which the user is now the new interface, is fundamentally about multiple user interface technologies and enablers converging to provide a more holistic and immersive user experience.