IDATE Research

Spectrum

Public safety spectrum

How to meet the broadband needs of public safety users?

M14313IN1 – March 2014

This document is a part of our "Wireless" category which in 2014 includes:
- One dataset in Excel, updated yearly
- One state-of-the-art report in PowerPoint, updated yearly
- Four market reports in Word, each with its synopsis in PowerPoint
- Privileged access to our lead telecom strategy analysts

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DIGIWORLD by IDATE

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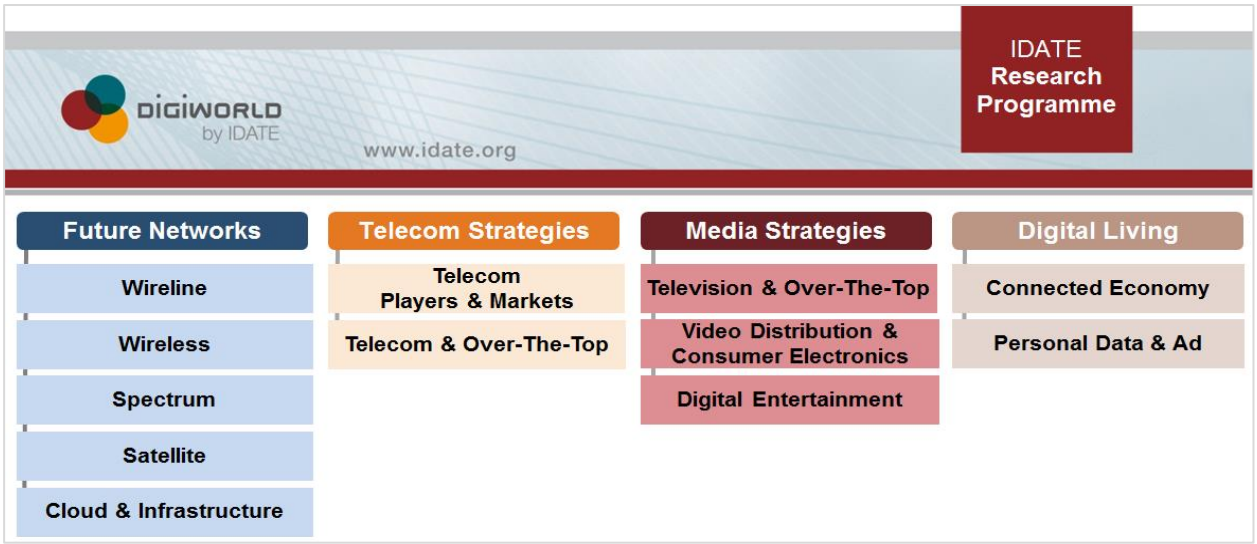
About IDATE and DigiWorld Institute

Founded in 1977, IDATE has gained a reputation as a leader in tracking telecom, Internet and media markets, thanks to the skills of its teams of specialized analysts. Now, with the support of more than 40 member companies – which include many of the digital economy's most influential players – the newly rebranded DigiWorld Institute has entered into a new stage of its development, structured around three main areas of activity:

- **IDATE Research**, an offer of market intelligence publications
- **IDATE Consulting**, time-tested analysis
- **DigiWorld Institute**, a think tank on the digital economy



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Contents

Tables & Figures

2. Methodology & Definitions

2.1. Methodology

The methods employed by IDATE's teams of analysts and consultants are based on an approach that combines:

- research and validation of data collected in the field;
- the application of classic industry and market analysis tools: segmentation, competition analysis, strategic strengths, modelling, assessment and forecasts…;
- the expertise of specialists who contribute their own analytical capabilities and those of their network of market analysts.

More specifically, the tools employed by IDATE's teams are as follows:

1/ A multi-disciplinary team of full-time consultants, specialised by sector of activity

IDATE's analyses are performed primarily by our in-house consultants, and very occasionally by freelance market analysts. This approach allows us to capitalise on our pool of expertise through teamwork, sharing knowledge, ideas, contacts, viewpoints and key data. Each report is drafted by a team of specialists, overseen by senior consultants with a proven track record in their field.

2/ Primary and secondary research

IDATE reports and databases are compiled based on primary data obtained from one-on-one interviews with the sector's decision-makers, and on secondary data which is established by cross-referencing public sources and external databases.

3/ An integrated information centre sustained by a number of tools and proprietary databases

Over the past 30 years, IDATE has established working and data organization methods and proprietary databases that trace the central chapters in the history of our sectors of expertise.

- Companies: IDATE's in-house data service tracks the latest news and events to come out of the top telecom, Internet and media industry companies around the globe. Innovative firms and start-ups are monitored by the market experts in the different "Practices".
- Markets: IDATE's databases are derived from rigorous processing of fundamental economic variables (GDP, investments, exchange rates, demographics, etc.) and their relation to decisive sector-specific and national elements (capex, national market dynamics, etc.).
- Technologies: IDATE's organization by Practice provides us with an efficient means of tracking innovation. IDATE's engineers ensure in-depth understanding of the changing shape of products and services and of the latest innovations in the marketplace.

4/ Contents of the published reports

Each IDATE market report details the structures and issues at play in the market being examined, the decisive forces (technologies, regulation, consumption) and the players involved. Particular emphasis is given to market assessments and forecasts, as part of the central premise. All market reports are laid out in a clear and concise manner, and illustrated with tables and graphs of key market data and trends.

The process of drafting of a market report includes the following stages:

- analysis of the information available in the in-house databases, and review of analyses performed in the recent past;
- based on a preliminary segmentation and assessment of the market, and as part of an validated interview guide, analysts conduct interviews that enable them to validate working hypotheses;
- a market model is then established, making it possible to test the hypotheses that have an impact on the market's development, and validated by a new round of interviews;

- and, finally, the report's conclusions are debated with the team responsible for the project and with expert consultants from the various fields involved;
- a final proofreading and editing/revision process, prior to the production of the final version of the report which is delivered to the client.

5/ Market assessment and forecasts

- Primary data gathering worldwide.
- Market models which isolate key service consumption parameters and service pricning assumption.

2.2. What is PPDR?

Public protection and disaster relief is a top priority subject for both citizens and governments. Radio solutions are an essential element in public safety operations. The public safety services, including fire brigades, police forces, ambulance services and maritime and coastguard services, are the primary protector of life and property in cities, towns and beyond, throughout the world. These organisations provide an individual and professional response to incidents and disaster situations.

Public protection and disaster relief (PPDR) is the general designation given to a range of public safety services. Informally, they consist primarily of police, fire and emergency medical services. Also included within the ambit of PPDR are search and rescue, border security, event security, protection of VIPs and dignitaries, evacuation of citizens and other aspects of response to natural and man-made disasters.

- The formal definitions of PPDR derive from Report ITU-R M.2033 'Radiocommunication objectives and requirements for public protection and disaster relief':
  - Public protection (PP) radiocommunications: radiocommunications used by responsible agencies and organisations dealing with the maintenance of law and order, protection of life and property, and emergency situations.
  - Disaster relief (DR) radiocommunications: radiocommunications used by agencies and organisations dealing with a serious disruption of the functioning of society, posing a significant, widespread threat to human life, health, property or the environment, whether caused by accident, nature or human activity, and whether developing suddenly or as a result of complex, long-term processes.
- The work of the FM49 in ECC Draft Report 199 defines three types of PPDR events:
  - Day-to-day operations (category 'PP1') encompass the routine operations that PPDR agencies conduct within their jurisdiction. Most public protection spectrum and infrastructure requirements are determined using this scenario.
  - Large emergency and/or public events (category 'PP2')

    The size and nature of the event may require additional PPDR resources from adjacent jurisdictions, cross-border agencies or international organisations. A large fire encompassing three or four blocks in a large city, or a large forest fire, are examples of a large emergency under this scenario. Likewise, a large public event, be it national or international, could include a G8 summit or the Olympics.
  - Disaster relief (category 'DR') can be those situations caused by either natural of human activity. Natural disasters include an earthquake, major tropical storm, a major ice storm or floods. Examples of disasters caused by human activity include large-scale criminal incidences or situations of armed conflict.
- A PPDR framework should include frequency bands for narrowband, wideband and broadband systems. The ITU-R Report M.2033 defines narrowband, wideband and broadband systems:
  - Narrowband: Wide area networks with typical bandwidths up to 25 kHz. Narrowband systems are generally national and permanent networks.
  - Wideband: Wideband systems will carry data rates of several hundred kilobits per second (such as in the range 384-500 kbit/s), which will allow the transmission of large blocks of data, video and internet protocol-based traffic. Wideband systems will complement narrowband systems and will also be national and permanent networks.

- Broadband: Broadband technology will allow new capabilities and functionalities to support higher data speeds and higher resolution images. It is foreseen that these broadband systems will generally be localised at the scene of the incident or accident (also referred to as ‘hot spot’ areas) or at a large-scale event (concert or sport), where PPDR personnel are operating. These systems could provide voice, high-speed data, and high-quality digital real-time video and multimedia applications requiring data rates in the range of 1-100 Mbps. Broadband networks will generally be temporary and localised in nature.