

## Case Study



### Alleviation of congestion through better traffic controls

At NTT DATA, we have developed an algorithm to simulate future traffic movements by combining sensor data to track traffic position and speed, with environmental information, such as local traffic news. Using predictive analytics, we can then manipulate the sequencing of traffic signals and reverse traffic lanes dynamically, to alleviate traffic congestion.



### Ultra-rapid development through development technology innovation

At NTT DATA, we are accelerating ultra-rapid system development through the use of three pillars: "Visualization," in which design information is regenerated and diagnosed by visualizing the structure and risk of the current system; "Realization," in which the system can be automatically built and repeatedly confirmed based on the results of the requirement definition; and "Value Creation," in which new viewpoints can be discovered in the planning stage of the system.

## About NTT DATA

*NTT DATA is a leading IT services provider and global innovation partner headquartered in Tokyo, with business operations in over 40 countries. Our emphasis is on long-term commitment, combining global reach with local intimacy to provide premier professional services varying from consulting and systems development to outsourcing. For more information, visit [www.nttdata.com](http://www.nttdata.com).*

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### NTT DATA Technology Foresight

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Contact NTT DATA Technology Foresight team if you are interested in knowing more about any of these trends.



# NTT DATA Technology Foresight 2014

*Looking ahead : Technology trends driving business innovation.*

*NTT DATA Technology Foresight aims to map out the impact that technology will have on society and business in the coming years and outline expected business innovation.*



# Information Society Trends

We anticipate four key trends will have a significant impact on our clients' medium to long-term business.

## Information Society Trends

01

### Power of the individual

The growing influence of individuals will transform existing societies and industries. Providers will need to rebuild their existing business models to be more customer-centric, embracing the increasing power of the individual.



## Information Society Trends

02

### Collaborative value creation

Cooperation between companies and users will also continue to progress and there will be increasing use of a participatory model, in which users assume partial responsibility for product development and related services.



## Information Society Trends

03

### Knowledge society

The amount and variety of accumulated information will continue to grow rapidly and the analysis and use of information will become more sophisticated. The source of value will shift from tangible things and assets to the use of knowledge, design and functionality.



## Information Society Trends

04

### Smarter society

More flexible responses to environmental changes will help to address social and environmental issues. Better prediction and forecasting capabilities will improve prevention and mitigation of damage, leading to a more sustainable society.



# Technology Trends

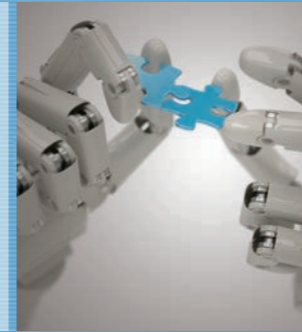
The following 10 technology trends are expected to have the biggest influence on the world around us in the coming years.

## Technology Trends

01

### Natural extensions of human abilities

Digital devices will increasingly react to human behaviors and situations. Intuitive interfaces will spread, and digital devices are expected to be embraced by society without any burden. Human abilities in terms of the body, knowledge, situation awareness and others will naturally be enhanced by the use of the devices.



## Technology Trends

02

### Modeling of human beings

The biology, behavior, senses and psychology of human beings will be understood ergonomically, and will be applied to various services. Personalization, enthusiasm and continuous motivation will be realized, and new services that utilize the five senses will appear.



## Technology Trends

03

### Mobile-centric

Smart devices will become the hub for connecting services, devices and people. The multi-functionality of smart devices will progress, and it will become part of the social infrastructure. User interfaces appropriate for mobile use will be devised and operability will improve.

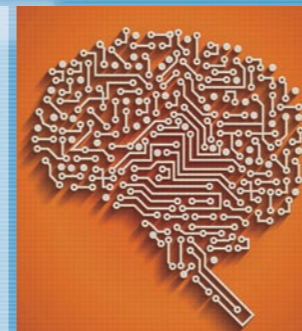


## Technology Trends

04

### Intelligent processing by artificial intelligence

Computers will partially replace the intellectual activities of human beings. Increasingly, computers will complement human knowledge and expertise, enabling us to spend more time pursuing activities rich in creativity and humanity.

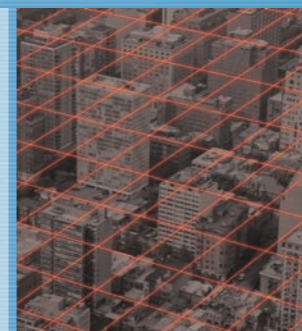


## Technology Trends

05

### Real-world sensing and analysis

The spread of advanced sensing technologies will enhance our understanding and our ability to predict natural events. Data about people, things, society and the environment will be collected in real-time and in large amounts, and it will be applied to the strengthening of industrial competitiveness, the design of cities and social systems as well as the abnormality detection in disaster prevention.



## Technology Trends

06

### Smart infrastructures

Increasingly, software will be embedded into infrastructure, delivering total optimization to society. Supply chains will be highly automated and the consumption of resources such as energy will be minimized.

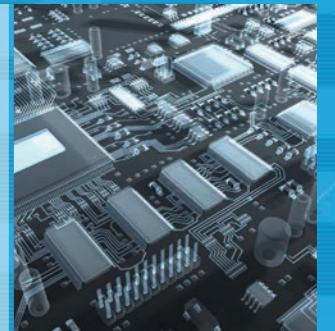


## Technology Trends

07

### Next-generation web architecture

Change will occur in the architecture of the web, and cloud-side processing loads are expected to be transferred client-side. The enrichment and acceleration of applications will progress and the introduction of green technologies will also advance.



## Technology Trends

08

### Environmentally adaptive IT systems

IT systems will become more adaptable to change, responding quickly and automatically to fluctuations in loads and data amounts. Operations and testing will be made more efficient, and there will be greater cooperation among data centers.



## Technology Trends

09

### Defense in depth

Cyber attacks will become increasingly sophisticated, requiring more defensive steps to be taken at the time of intrusion to minimize the damage caused. In addition to preventing intrusion, there will be increasing adoption of multi-layered measures that combine high-accuracy detection, damage diffusion prevention as well as the decentralization or encryption of sensitive information.



## Technology Trends

10

### Rapid design technologies

Rapid and iterative development will improve responsiveness to market changes, and optimize the value of products and services. Advanced rapid development technologies, such as 3D modeling, system development automation and simulation will proliferate.

