

New image recognition service for displaying detailed information on food products, vehicles, etc. through mobile terminals

May 22, 2012

NEC

3rd Carrier Services Division

Service background

- Spread of smartphones, tablets, and other mobile devices equipped with cameras
- Increase in demand for easy access to valuable data among large amounts of data

Demand for a service that enables **easy and quick** access to information using **camera images**



Calls for the use of **“image recognition”** technology for **mobile terminals**

Challenges in creating an image recognition service for mobile terminals

- The need for a versatile system that enables recognition of a wide variety of objects (special systems for fingerprint identification and face recognition exist)
- Processing using limited resources, i.e., a mobile terminal (image recognition involves a large volume of data and computational complexity)
- Construction of a fast and accurate recognition system
- Maintenance/operation costs



NEC's initiatives in image recognition technology

R&D of world-class image recognition technologies

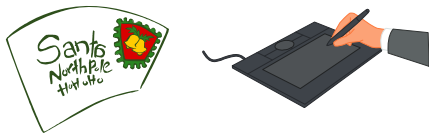
Contributing to public safety business in Japan for more than half a century

1960 Start of character recognition research
1969 Postal code reader and sorter
1989 Postal address reader
2009 Hong Kong Customs support system

1969 Start of fingerprint technology research
1982 AFIS deployment in National Police Agency
2003 No. 1 NIST benchmark evaluation

1989 Start of facial recognition research
2002 Commercialization of facial recognition technology "NeoFace™"
2009 No. 1 in NIST MBGC *1
2010 No. 1 in NIST MBE *2

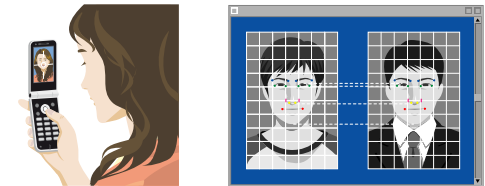
Character recognition technology



Fingerprint identification technology



Facial recognition technology



Deployment achievements (facial recognition)

- Facility gate control and detection of suspicious persons
- Blacklist matching for border control in Hong Kong
- Universal Studios Japan annual entrance pass identity verification
- Device log-in verification (PC, mobile phones), etc.

NIST: National Institute of Standards and Technology

*1 <http://face.nist.gov/mbgc/>

*2 <http://www.nist.gov/itl/iad/ig/mbe.cfm>

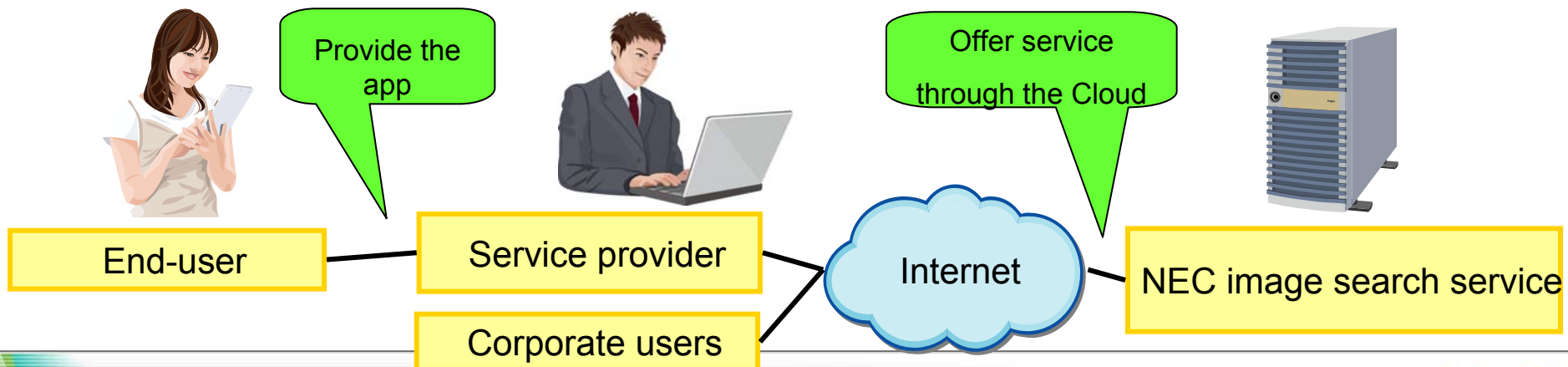
New image recognition service

1. Enables fast and accurate recognition

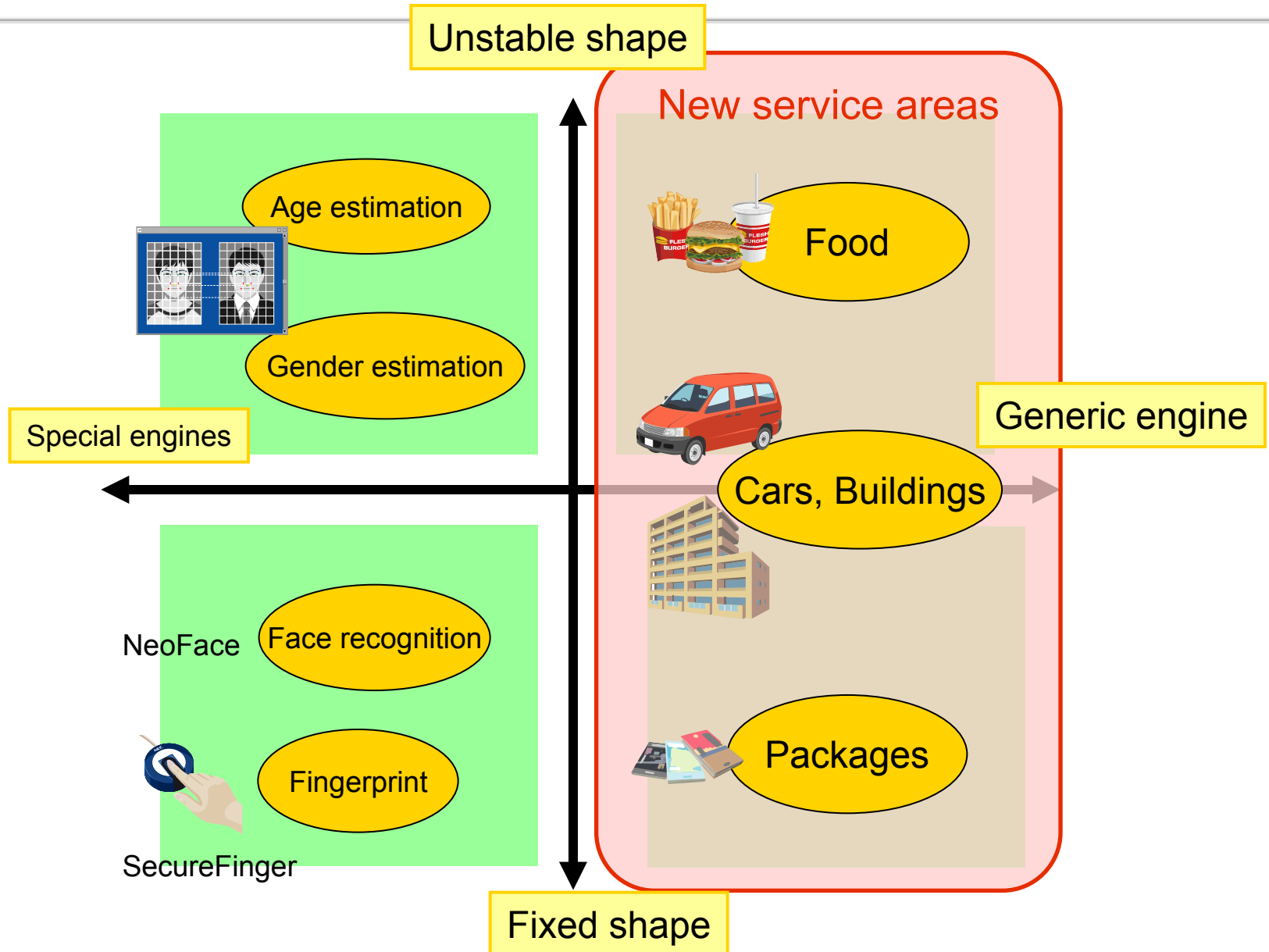
- Equipped with the world's **fastest and most accurate recognition technology** developed by NEC.
- Practical operating speed for smartphones and other **limited computational resources** achieved through image **data compression** and **reduction in computational complexity**.

2. Facilitates service deployment by offering the system through the Cloud

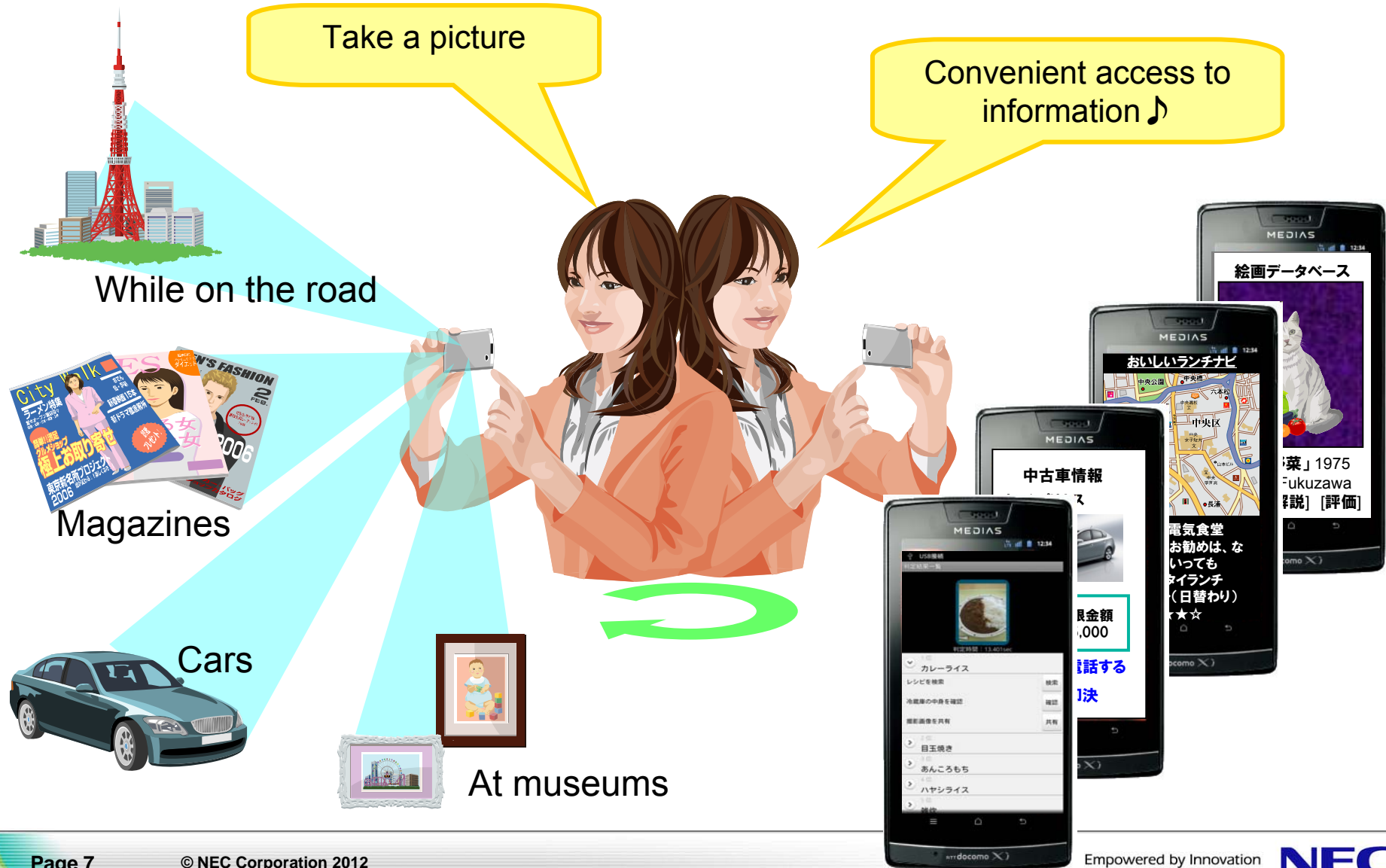
- Offers systems essential for the service, such as image processing engines, data base updates, etc. through the **Cloud**.
- No need to develop new systems; the service can be introduced easily and at low cost.



New service areas

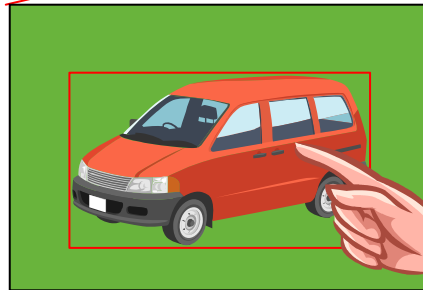


New service usage scenarios



Service application example①: Use the service for looking up cars and prices

Learn about the type/maker and brand - new or second-hand - price information for a **car** you just saw:



PUSH!

Use the service for “**car recognition**” to access car details and price information with one push
⇒ **Enhance purchasing motivation**

NEC Motors Service-X



New car info:

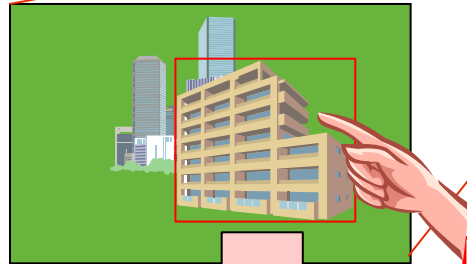
Capacity: 7 persons
Color: white, red, blue
Length: 4200mm
Weight: 1380kg
Gas mileage: 20km/l
Ranking: ★★★★★

Second-hand car info:

⇒ To second-hand car search

Service application example②: Use the service for finding out apartment vacancies and room availability

Locate realtor contact information or vacancies in an **apartment** you just saw:



PUSH!

Use the service for “**apartment recognition**” to access rent and vacancy information with one push
⇒ **Enhance purchasing motivation**

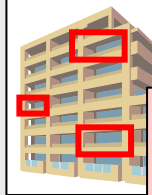
NEC Condominium

1-23-45 Shiba
Minato-ku Tokyo



N NEC Realtor
03-1234-5678

Vacancy info



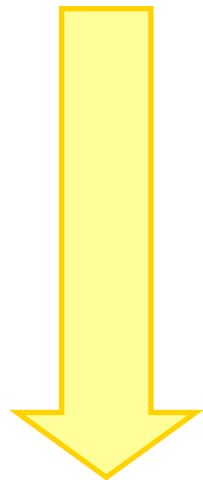
With one
more
PUSH!

NEC Condominium Rm. 202

Rent: ¥150,000
Administrative fee: ¥10,000
Deposit: 1- month rent
Key-money: 1-month rent
Year built: 15 years
Orientation: South
Layout: 3LDK

Service application example ③: Use service for obtaining information on food ingredients and recipes

Learn about nutritional information and recipes for the **dish** you are about to eat



PUSH!

判定結果一覧

判定時間: 8.961sec

Pork curry: 750kcal

Pork curry recipe:

Ingredients;

Pork 500g

Potato 4 pieces

Onions 2 pieces

Carrots 1 piece

Garlic 1 clove

Curry powder: as desired

Water: as desired

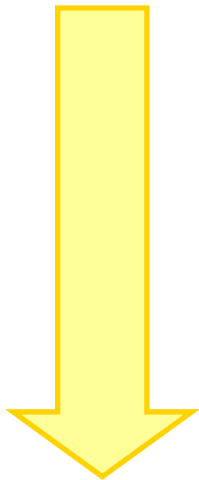
Procedure①

Slice meat, carrot, onions, and potatoes to bite sizes and sauté on a fry pan with the garlic.

Use the service for “**food recognition**” to access food information with one push ⇒ **Easy and convenient way to obtain information**

Service application example④: Information brochure

Tell me more about the pictures in this brochure!



PUSH!

Service recognizes printed material
One-push access to tourist information
⇒ Detailed information on where you want to go



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To be a leading global company
leveraging the power of innovation to
realize an information society friendly to
humans and the earth.



Empowered by Innovation

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