Cross-Border & Regional Identity Management

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Who we are

Provides telecommunications, IT and Enterprise business solutions

- Around **98,726** employees worldwide
- **USD 25.2 billion** net sales
- **217** consolidated subsidiaries
- Headquarters: **Tokyo, Japan**
- **118** years of brand success

- World's Top 100 **Most Innovative Organizations**
- Fortune Global **500** company

* World’s Top 100 Most Innovative Organizations for 2013 (Thomson Reuters)
Business Segments

Solutions

For Public
• Airport Solution
• Disaster Prevention
• Railway Solution
• Security Solution
• Smart City, Stadium Solution
• Space System

For Telecom carriers
• Mobile Backhaul
• Broadband Wireless Access
• M2M
• Operation & Management System
• Submarine System

For Enterprises
• Industry Solutions
• Automotive
• Education
• Finance
• Healthcare
• Hospitality
• Manufacturing
• Retail

For Smart energies
• Energy Management System
• Electric Vehicle (EV) Charging Infrastructure
• Energy Storage System
• Water Management System

Solution Topics

Big Data
Cloud
SDN

Common Platform
Server/Storage
Unified Communications
Display
Global Trends and Growth

World population: 7 billion
World population: 9 billion (1.3 X)
Ratio of urban residents: 50%
Ratio of urban residents: 70%

Energy demand: 1.8 X
Greenhouse gases: 1.5 X
Demand for food: 1.7 X
Demand for water: 1.6 X

Scale of world economy: 4 X

Migration and Regional Travel Increasing as people move towards resources

(Present to 2050)

(* Source: UN, FAO, OECD, PWC, IMF)
Border Management

Larger migration, immigration, tourism, professional relocation and general cross-border activities place strain on border management infrastructures, results in the need for:

- Additional immigration and border management officials
- Additional security to manage official ports of entry
- Additional security to protect borders
- Better systems to protect citizenry and services
- New and enhanced infrastructure in general to cope with additional border activities

Ground work for border control and immigration systems commences with ability to identify citizens and foreigners alike

**National Identification Systems provide this ability**
Consolidated Governmental Systems

National ID System with Consolidated Data

Population Register
Birth, Marriage, Death

Social Services

Drivers License

Passport / Immigration

Electoral Systems

Taxation

Law Enforcement

National ID System

New-born / Infant / Toddler ID subsystem

Foreigner Resident / Visitor ID Subsystem

ID / Passport Personalisation / Printing

Governmental Services

National ID (Births Marriage, Deaths)

Immigration / Passport

Drivers License

Elections

Taxation

Law Enforcement

Single View of the Citizen
- Reduction in Identity Theft
- Quick/efficient service delivery
- Service enabler

Demographic Data Shared
- Enables efficient service delivery across Govt. departments
- Reduction in resources/costs

Shared Infrastructure
- Communication and data centers can be shared
- Government-wide call centers

Reduced Costs
- Overall reduction in service costs
- ROI fed back to the Citizen
Consolidated Governmental Systems

National ID System with Consolidated Data

- National ID System
- Immigration / Passport
- Drivers License
- Elections
- Taxation
- Law Enforcement

- New-born / Infant / Toddler ID subsystem
- Foreigner Resident / Visitor ID Subsystem
- ID / Passport Personalisation / Printing

Governmental Services

- National ID (Births Marriage, Deaths)
- Immigration / Passport
- Drivers License
- Elections
- Taxation
- Law Enforcement
Movement Control Systems with Biometric Data

National ID System with Consolidated Data
- National ID (Births, marriage, Deaths)
- Immigration / Passport
- Drivers License
- Elections
- Taxation
- Law Enforcement

New-born / Infant / Toddler ID Subsystem

Foreigner Resident / Visitor ID Subsystem

Watchlists
- Database

Visa
- Database

Immigration / Passport
- Database

Citizen Identity Management

Biometrically Verifiable Movement Control & Border Management
- Ports of Entry
- Advanced Passenger Information
- VISA Applications

E-Border Management

Foreigner & Visitor Management
Cross Border and Regional Identity Management

National databases do not necessarily allow for Cross Border and Regional Identity Management – are a precursor for the re-use of data and regional cooperation.
Cross Border and Regional Identity Management

Advantages

- e-Border management reality
- Enhanced regional cooperation & security
- Shared resources
- Advanced traveller notification
- Clear view on long-term business travellers – taxation
- Simpler and quicker movements
- Reduced resources
- Identification mechanisms for asylum seekers

Challenges

- Legislation / (inter) Departmental responsibility
- Regional / International agreements
- Budgets and international funding
Technology Focus – Biometric Technologies

Most common form of Biometric for National ID

Automated Fingerprint Identification System

Automated Biometric Identification Systems

• Traditional Biometrics Systems utilised Fingerprints only
• Advances in technology allow for the inclusion of others:
  • Facial
  • Iris
  • Voice

Challenges

Interoperability – ensuring biometric systems from different vendors can exchange data

Infrastructure – often border posts have limited infrastructure, i.e. connectivity, electricity, etc.

Children’s Fingerprints – to date, no feasible, implemented method of identifying children from new-born exists

Trust across Systems – Security, Trust and Data Sharing. International agreements for the participation in regional travel schemes required
Advances in Capturing Child-Fingerprints

The prototype device which is designed for child-fingerprint identification successfully captured the fingerprint images of over 300 children, including more than 100 from infants younger than 6 months, one of whom was just 6-hours old newborn baby.

Fingerprint image taken from 6 Hours Newborn

http://biometrics.cse.msu.edu/Publications/Fingerprint/Koda_ChildFingerprintHighResSLDR.pdf
Technology Focus – Biometric Technologies (NIST)

NIST's biometric activities include:
- research on the various biometric modalities: fingerprint, face, iris, voice, DNA, and multimodal
- standards development at the national and international level
- technology testing and evaluation, which leads to innovation

Efficient method to Benchmark different Vendors and Technologies
- Accuracy
- Speed of Processing
- Processing costs
- Interoperability
- Efficacy of Technology to Business Requirement
- Standardisation
- Assist with Vendor Choice
Smart Border Project in the EU

Number of border crossings in the European Union expected to rise to 887 Million by 2025
More than 295 million expected to be from non-European countries

‘Smart Borders’ Pilot Program was completed in 2015
• 18 Border crossing points (Air, sea and land borders)
• 58,000 travellers participated
• Biometrics used:
  ➢ Fingerprint
  ➢ Facial Recognition
  ➢ Iris
• Process Accelerators:
  ➢ E-Gates
  ➢ Kiosks

Result-
Average durations for the whole border crossing process ranged from 14 to 41 seconds
Concluding remarks

• Although alternative technical solutions to Cross-border and Regional management exist – implementing National ID solutions as a precursor adds many benefits, including the abilities to:
  
  • provide more effective services within country
  • protect citizenship and identity theft
  • ensure fast and seamless cross border movements

• Currently a large percentage of countries within Africa do not have National ID solutions
• The sharing of data amongst regional countries and therefore the necessary agreements between them are essential
• Initiatives such as ECOWAS provide a good basis for expansion
NEC brings together and integrates technology and expertise to create the ICT-enabled society of tomorrow.

We collaborate closely with partners and customers around the world, orchestrating each project to ensure all its parts are fine-tuned to local needs.

Every day, our innovative solutions for society contribute to greater safety, security, efficiency and equality, and enable people to live brighter lives.