eGovernment services would yield up to $50 bn annual savings for Governments globally by 2020

while increasing convenience, trust and citizen satisfaction

Secure Identity Alliance – November 2013
Agenda

Current state of play

Quantification of savings

Additional benefits

Vision

Roadmap
Public services with large incremental potential through digitization and trusted digital identity

Evolutionary path of digital identity value creation

I. Creating basic digital product experience
   - Basic digital identity usage for secure authentication

II. Leveraging personal data internally
   - Internal enhancement
     - Usage data for R&D, delivery optimization, etc.
   - Telco & media

III. Tapping data ecosystem opportunities
   - External applications
     - Sharing data with third parties in both directions
   - Internet sectors
   - Retail

Source: SIA; Liberty Global and BCG "The Value of Our Digital Identity" (2012)
Expansion of online government services would be very well received among citizens.
Examples—governments are actively pushing eGov improvements with digital service delivery

Source: SIA; BCG analysis
Agenda

Current state of play

Quantification of savings

Additional benefits

Vision

Roadmap
Global share of digital transactions ~30% in 2020, yielding ~$30-50B annual savings

### Number of digital transactions
- **2011**: Approx. 21 billion
- **2020**: Approx. 66-78 billion

### Saving public admin. vs. 2011 ($B)
- **2020 savings (vs. 2011)**: $29-54B
- **Per citizen affected**: 0.1-1 B

### Time saving citizens vs. 2011 (B h)
- **2020 savings (vs. 2011)**: 21-29 B h
- **Per citizen affected**: 0.2-0.5 B h

Note: Savings measured vs. 2011
1. Government with citizens interactions (excludes businesses)
2. Person living in country with digitization effort

Source: SIA; BCG analysis; Economist Intelligence Unit; UN eGovernment survey 2008-2012
eGovernment yields $30–50B annual savings by 2020—enabled by trusted digital identity

Annual eGovernment savings by 2020 ($B)

**North America**
- $19B
- $13B

**South America**
- $1B
- $0.1B

**Middle East**
- $2B
- $0.5B

**Europe**
- $18B
- $8B

**Eastern Europe**
- $2B
- $0.4B

**Asia**
- $10B
- $6B

**Africa**
- $0.2B
- $0.1B

**Oceania**
- $1.5B
- $0.7B

**Minimum expected savings**
- < $1B
- $1–2B
- $2–10B
- $10–20B

Savings potential

Note: Savings measured vs. 2011, include interactions between government and citizens (excluding businesses)
1. South America, Central America, Caribbean
2. Western Europe, Central Europe, Northern/Southern Europe
3. Eastern Europe incl. Russia
Source: SIA; BCG analysis; Economist Intelligence Unit; UN eGovernment survey 2008-2012

November 18, 2013  SIA eGov Study Nov 18 2013.pptx
Market model developed to quantify the potential administrative savings due to eGov

- Cost savings p.a. (worldwide/regional)
  - Cost savings p.a. country A
  - Cost savings p.a. country ...

- Cost delta analog vs. digital per transaction
  - Cost per analog transaction p.a.
  - Cost per digital transaction (constant)

- No. of total government transactions
  - No. of transactions in ref. countries
  - Population adjustment
  - Reference digital share 2011
  - Relative eGov readiness
  - Digital share growth rate
  - Analog cost in reference countries
  - GDP adjustment
  - Inflation factor

Source: SIA; BCG analysis
Cost per analog transaction

Variable analog cost of $3.30 to $4.30 in reference countries¹

Cost per analog transaction in reference countries¹ ($)

- Analog cost: $5.50–7.10
- Fixed analog cost: $2.20–2.80
- Variable analog cost: $3.30–4.30

Variable cost per analog transaction extrapolated with GDP

- Calculations based on range of analog process cost in reference countries¹
- Only variable cost part (assumed to be 60%) used for savings calculation, as fixed cost cannot be reduced easily
- Analog transaction cost is mainly labor cost, therefore can be extrapolated with GDP
- Analog process cost per country calculated based on scaling of GDP per capita for base year 2011
  - GDP per capita of country compared to GDP per capita of reference sample
- Analog process cost increases over time based on projected 2011-2020 CAGR of respective GDP

---

¹ Reference sample includes a set of five countries with data available publicly or from BCG experience
Source: SIA; BCG analysis; Economist Intelligence Unit
Cost delta analog vs. digital transaction

Resulting saving per transaction in ref. countries of $2.80 to $3.50

<table>
<thead>
<tr>
<th>Variable analog cost</th>
<th>Variable digital cost</th>
<th>Cost saving per transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3.30–4.30</td>
<td>$0.50–0.70</td>
<td>$2.80–3.50</td>
</tr>
</tbody>
</table>

Constant digital cost compared to increasing analog cost

- Digital transaction cost based on reference countries
- Digital transaction cost mainly comprised of IT and highly skilled engineer labor, therefore assumed to be equal for all countries
- Digital transaction kept constant at $0.5-0.7 over time as inflation (energy, labor part) balances out with price decrease in hardware
- Digital transaction cost assumed to be 100% variable (e.g., through cloud computing)
- Analog transaction cost increases as shown on previous slide
- Cost savings thus vary by country – chart on left only shows reference countries

Source: SIA; BCG analysis; Economist Intelligence Unit
Total number of government transactions per country

- Transactions include all interactions with government authorities (tax collection, advice, registrations, ...)
- Constant number of transactions per capita over time for all countries based on reference sample
- Number of total transactions per country calculated based on population scaling
  - Population of country compared to reference sample (2011 values)
- Reverse effect of digitization included in model
  - Number of (digital) transactions rises due to increased convenience—10% of digitization uptake is added on top of digital transaction volume
  - This causes a (small) negative effect on digitization savings

### Extrapolated global transaction volume 2011

- Africa/Oceania: 30
- Middle East: 1
- Asia: 118
- Europe: 23
- Americas: 29

### Areas of interaction gov't. with citizens

- Tax: 28%
- Infrastructure: 28%
- Service: 16%
- Benefits/Various: 12%
- Information: 8%
- Registrations: 3%
- Other: 4%

### Total number of transactions per country

- Number of total transactions per country calculated based on population scaling

### Extrapolated global transaction volume 2011

- Tot. interactions gov't. with citizens: 213B

### Source:

SIA; BCG analysis; Economist Intelligence Unit
Digitization degree in base year

**S-curve function approximates the 2011 digitization share per country**

Share of digital transactions in base year 2011 (%)

- Very low eGov index results in disproportionately low scaling

**Share of digital transactions calculated via S-curve model**

- Baseline used from reference countries
- Classification of transactions into digital and analog transactions
  - Internet, e-mail, SMS, electronic transfers categorized as "digital"
  - Onsite visits and phone calls (call center or automated/interactive system) designated as "analog"
- UN eGovernment "Readiness Index" used to compare countries to references
- S-curve scaling model used to calculate the number of digital transactions worldwide

Source: SIA; BCG analysis; UN eGovernment survey 2012
Digitization growth curve until 2020

**Worldwide digital transactions** grow to ~67B (30%) in 2020

Number of digital government/citizen transactions worldwide (B)

- Countries' growth rates of digitized transactions based on increase of eGov index from 2008 to 2012 plus manual adjustments
- Digitization capped at 80% of transactions (some transactions cannot be digitalized)
- Countries clustered into categories with corresponding digitization start year based on expected local digitization uptake
  - Level of administrative sophistication
  - Economic outlook and stability
  - Size of country
  - Desire/need to control
  - Cultural features
  - BCG experience

**Digitization per country based on eGov index and clustering method**

- Countries' growth rates of digitized transactions based on increase of eGov index from 2008 to 2012 plus manual adjustments
- Digitization capped at 80% of transactions (some transactions cannot be digitalized)
- Countries clustered into categories with corresponding digitization start year based on expected local digitization uptake
  - Level of administrative sophistication
  - Economic outlook and stability
  - Size of country
  - Desire/need to control
  - Cultural features
  - BCG experience

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1. Manual adjustments made based on BCG experience
2. Government with citizens interactions (excludes businesses)

Source: SIA; BCG analysis; Economist Intelligence Unit; UN eGovernment survey 2012
**Global eGov cost savings vs. 2011**

**Annual savings¹ by 2020 due to eGov between $29B and $54B**

Global annually recurring savings per year vs. 2011 (B$)

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>0</td>
<td>4</td>
<td>9</td>
<td>15</td>
<td>21</td>
<td>28</td>
<td>32</td>
<td>35</td>
<td>37</td>
<td>39</td>
</tr>
</tbody>
</table>

**Savings calculated based on transaction cost reduction**

- Savings calculated based on difference between digital- and analog transaction cost, multiplied by number of digitized transactions
- Reverse effect: Number of (digital) transactions also increases due to improved convenience of interacting with government
  - 10% of digitization uptake is added on top of digital transaction volume
  - Valued with respective cost per digital transaction at ~ $1B globally in 2020

¹ Compared to 2011

Source: SIA; BCG analysis; Economist Intelligence Unit; UN eGovernment survey 2012
Model also applied to quantify time saving potential for citizens due to eGov

- Time savings p.a.
  - Time savings p.a. (worldwide/regional)
  - Time savings p.a. country A
  - Time savings p.a. country ...

- No. of total government transactions
- No. of digitalized transactions
- Digital transaction share p.a.

- Population adjustment
- No. of transactions in ref. countries
- Reference digital share 2011
- Relative eGov readiness
- Digital share growth rate

- Cost delta analog vs. digital per transaction

- No. of transactions in ref. countries
- Population adjustment
Estimated time savings worldwide

Citizens save transport and waiting time for each digitized transaction

- Analog: ~ 15 min
- Digital: ~ 15 min
- -30min (-67%)

Global annual time savings of 21–29B hours due to digitization of transactions

- Asia: 18
- Europe: 4
- Americas: 3

2020 savings (vs. 2011)

Source: SIA; BCG analysis; Economist Intelligence Unit; UN eGovernment survey 2008-2012
Agenda

Current state of play

Quantification of savings

Additional benefits

Vision

Roadmap
There are substantial benefits of a trusted digital identity beyond the quantified potential:

**Benefits for citizens**
- Increased convenience—services available 24/7 from everywhere
- Faster processing lead times
- Increased transparency of processes
- Improved security of transactions

**Benefits for governments**
- Monetize by selling e-Documents to private organizations
- Enhance growth of digital economy by educating citizens and introducing a trusted digital identity as key enabler
- Higher process quality and citizen satisfaction
- Improved data basis for decision making through detailed transaction data

Source: SIA; BCG analysis
Governments create digital economy value by introducing a trusted digital identity framework

### Digital identity sectors

<table>
<thead>
<tr>
<th>Sector</th>
<th>2020 per sector (B$)</th>
<th>Frequency of trusted digital identity usage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1  Public services/health²</td>
<td>522</td>
<td><img src="image" alt="frequency" /></td>
</tr>
<tr>
<td><strong>Manufacturing industries</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  Traditional production</td>
<td>95</td>
<td><img src="image" alt="frequency" /></td>
</tr>
<tr>
<td>3  Retail</td>
<td>53</td>
<td><img src="image" alt="frequency" /></td>
</tr>
<tr>
<td>4  Financial services</td>
<td>130</td>
<td><img src="image" alt="frequency" /></td>
</tr>
<tr>
<td><strong>Services industries</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5  Telco and media</td>
<td>31</td>
<td><img src="image" alt="frequency" /></td>
</tr>
<tr>
<td>6  Web 2.0 communities</td>
<td>53</td>
<td><img src="image" alt="frequency" /></td>
</tr>
<tr>
<td>7  eCommerce</td>
<td>305</td>
<td><img src="image" alt="frequency" /></td>
</tr>
<tr>
<td><strong>Internet industry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8  Info/entertainment</td>
<td>197</td>
<td><img src="image" alt="frequency" /></td>
</tr>
</tbody>
</table>

1. Combined value for organizations and consumers in EU-27
2. Large potential in public sector due to relatively low degree of digitization today

Source: SIA; Liberty Global and BCG "The Value of Our Digital Identity" (2012)
Governments create digital economy value by introducing a trusted digital identity framework.

<table>
<thead>
<tr>
<th>Digital identity sectors</th>
<th>Exemplary use cases for digital identity system</th>
<th>Frequency of trusted digital identity usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>Self-service, automation, personalized medicine, tax collection, digital signature</td>
<td><img src="https://via.placeholder.com/15" alt="Circle" /></td>
</tr>
<tr>
<td>Manufacturing industries</td>
<td>Traditional production, consumer insight, subscription-based services</td>
<td><img src="https://via.placeholder.com/15" alt="Circle" /></td>
</tr>
<tr>
<td>Services industries</td>
<td>Loyalty programs, marketing, service enhancements</td>
<td><img src="https://via.placeholder.com/30" alt="Circle" /></td>
</tr>
<tr>
<td>Public sector</td>
<td>Automation, personalized products, risk management, secure transaction</td>
<td><img src="https://via.placeholder.com/15" alt="Circle" /></td>
</tr>
<tr>
<td>Internet industry</td>
<td>Personalized services, monetization of consumer insight, marketing, automation</td>
<td><img src="https://via.placeholder.com/30" alt="Circle" /></td>
</tr>
<tr>
<td>Public sector</td>
<td>Service enhancements, monetization of user-generated content, marketing</td>
<td><img src="https://via.placeholder.com/15" alt="Circle" /></td>
</tr>
<tr>
<td>Traditional production</td>
<td>Secure transaction, monetizing consumer insight, marketing, fraud prevention</td>
<td><img src="https://via.placeholder.com/15" alt="Circle" /></td>
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Source: SIA; Liberty Global and BCG "The Value of Our Digital Identity" (2012)
Agenda

Current state of play
Quantification of savings
Additional benefits

Vision

Roadmap
Guiding principles for digital identity value creation ...

- Privacy:
  - Provide options for control regarding data sharing

- Transparency:
  - Take accountability for a trusted flow of data

- Responsibility:
  - Increase data security in order to safeguard digital identity

- Benefits:
  - Communicate benefits and engage users for sustainable data usage

Source: SIA; Liberty Global and BCG "The Value of Our Digital Identity" (2012)
... and how they apply for trusted identification solutions

Implications for trusted digital identity

- "Privacy by design"
- Dashboard that allows citizens to change usage rights and to define standard profiles for data usage
- Organizations using the system have to comply to a codex for how they treat and use personal data
- Any misuse will also impact secure identity providers' reputation
- Highest degree of protection incl. the processes of organizations
- Trace misuse and hold offenders accountable
- Communication of the secure identification solution focuses on enabled use cases rather than product features

Source: SIA; Liberty Global and BCG "The Value of Our Digital Identity" (2012)
Vision 2020: Trusted digital identity is a key enabler of everyday life

8. **Maintain personal information**
   Update central govt. database with new home address

7. **Digitally sign contract**
   Sign contract online using trusted digital identity

6. **Receive entitlement**
   Get immediate cash reduction at supermarket checkout

5. **Use as mobile key**
   Unlock car from carsharing pool using trusted digital identity on mobile device

1. **Communicate securely**
   Use secure digital mailbox for communication with government

2. **Consult physician online**
   Sign into secure video chat to remotely consult a physician

3. **Vote online**
   Electronically vote in city mayor election

4. **Edit tax report online**
   View tax report on tablet and send clarifying questions

Source: SIA; BCG analysis
Framework to discuss trusted digital identity use cases and product evolution towards 2020 vision

1. Some countries (e.g., with small population and already established eGov infrastructure) may still opt for a government supply model

Source: SIA; BCG analysis
Future ID technology will be based on smartcards and ID derivation method

### Smartcard-based eID

**Description**
- Smartcard-based eID securely stores personal ID information
- Devices (e.g., smartphones) access eID card via standard interface (e.g., NFC)
- Authentication on device via available methods (see part 2 of framework)

**Advantages**
- Secure storage of personal ID on smartcard
- Direct control over personal identity and data

**Disadvantages**
- Requires standardized contactless communication interface (NFC, low-power Bluetooth, or other)
- Lower flexibility compared to option 2

### eID derivation

**Description**
- "Root ID" held in secure document
- Additional IDs derived from root ID for end user devices and stored either locally (phone SIM, TEE\(^1\), etc.) or in cloud
- Authentication on device via available methods (see part 2 of framework)

**Advantages**
- Maximum mobility
- Inherent compatibility across devices

**Disadvantages**
- Highest convenience level can be achieved through cloud-based storage of eIDs, which may be less secure than local storage in a secure document

---

1. Trusted Execution Environment  Source: SIA; BCG analysis
Context-sensitive multi-factor ID breaks the compromise between convenience and security.

**Future ID methods break today’s compromise of security vs. convenience**

- Traditionally, convenience decreases with added security as authentication becomes more cumbersome.
- Future methods break this compromise and offer convenient authentication at all security levels.

**Future ID optimizes security, convenience, and cost through context awareness**

- Identification method depends on device type and features:
  - Biometric sensor (e.g., fingerprint, face, voice)
  - Non-biometric (e.g., PIN, TAN\(^1\), password)

- Identification method depends on security requirements of use case:
  - Simple authentication for low-stake applications (e.g., small payments)
  - Multi-factor authentication for high-stake applications (e.g., access health records)

- Identification method is economical:
  - Most economical ID solution is chosen for particular situation and application.

Convenience and security can go hand in hand in next-generation identification methods.
Today, trusted digital identities often limited to few use cases, preventing a broader adoption

Today: Mostly non-compatible systems, each requiring separate access ID

Future: Fully interoperable ecosystem, accessible by a trusted digital identity

Data exchange allows parties to share information in a convenient, yet secure and transparent way
- Increases data richness for decision making
- Reduces volume of (manual) data requests
- Facilitates information maintenance, as each type of information is stored in one database only
- Single sign-in enabled by identity federation

1. Secure, standardized data exchange and identity federation
2. Trusted digital identity

Multiple IDs—one per service

Public sector
- Social security
- Registry
- Taxes
- Automobile
- Visa
- Buildings
- Police
- Health

Private sector
- Public services/health
- Traditional production
- Retail
- Financial service
- Telco and media
- Web 2.0 communities
- eCommerce
- Info/entertainment

Citizens

Multiple jurisdictions

Source: SIA; BCG analysis
Trust frameworks enable widespread realization of benefits

What is a trust framework?

- **Technically ...**
  - A set of policies, standards, taxonomy and infrastructure that facilitates and enables trust and confidence between members
- **... but more importantly ...**
  - A way to unlock better, harmonised service delivery across government (and beyond) to better respond to the needs of customers
  - A way to take advantage of the opportunities of the emerging digital economy
- **... and practically ...**
  - Enhanced discoverability
  - Summary digital credential
  - "Tell us once"
  - Information re-use/pre-filling
  - Streamlined identity and data verification
  - Central location for info. and communication (e.g., digital inboxes, vaults)

Members/participants in the trust framework

Source: SIA; BCG analysis
Privacy and transparency are important pillars of a successful eGov implementation

Information richness and degree of sharing correlate with eGov usefulness

- Richness of available data determines type and quality of applications
  - Use case feasibility depends on certain set of data
  - Quality and automation of decision making increases with data richness

- Data sharing enables efficiency gains
  - Sharing enables each set of data to be stored in one place only, without duplicates
    - Maintenance of data is facilitated
    - Data on average is more accurate
  - Sharing reduces data requests as system feeds itself

- There are substantial benefits in generating citizen trust in the system
  - Implementation success based on a positive perception of benefit-risk ratio
  - Speed of digitization depends on public acceptance

Relentless focus on transparency and user control required for citizen trust

- Make data usage highly transparent
  - Type of information stored and rationale for storage
  - Access rights and access log
  - Legal framework for data use

- Give users degree of control
  - Make trade-offs regarding service availability explicit
  - Give user choice to surrender more data for non-core services

- Generate credibility via regular audits
  - Help discover and eliminate system weaknesses
  - Additional credibility from third-party assessment

Source: SIA; BCG analysis
e-Documents can be supplied by governments and/or private organizations

- **Government as single supplier of eIDs**
  - Highest trust level in e-Documents
  - Direct and full control
  - Leverage of existing govt. infrastructure possible
  - Potentially less cost effective
  - Potentially less innovative

- **eID supply by government and private organizations**
  - Could lead to increased innovation
  - Could save cost if designed well
  - Need to ensure sufficient trust
  - Need to manage compatibility
  - Increased coordination effort

- **eID supply only by private organizations**
  - Could lead to increased innovation
  - Could save cost if designed well
  - Need to actively ensure trust
  - Risk of e-Document proliferation and resulting compatibility issues
  - Sufficient market size required to make it attractive for companies

---

Choice of e-Document supply model depends on local conditions and preferences
Agenda

Current state of play
Quantification of savings
Additional benefits
Vision

Roadmap
Examples of successful eGov implementations pave the way for other countries

Examples: UAE, South Korea, Estonia

- UAE
  - Single entry
  - Interoperable strategy
  - Open Data
  - eParticipation

- South Korea
  - Mobile strategy
  - Business collab.
  - Legal innovation
  - Process innovation

- Estonia
  - Data exchange
  - E-vote
  - Everyday use
  - Transparency

Success story

- Focused eGovernment effort since 2001, today one of the most advanced eGovernments
- Detailed eGovernment strategy outlining priorities until 2021
- ~ 90% of govt. interactions can be performed online today
- Improved data use eliminated ~ 70% of civil document requests
- ~ 400 government services fully integrated, more to follow
- Great acceptance by the public

Cumulative worldwide eGov experience to guide a successful implementation in other countries

Source: SIA; BCG analysis; governments of UAE, South Korea and Estonia
Examples of successful eGov implementations pave the way for other countries
Examples: UAE, Belgium, Estonia

**UAE**
- **Highlights**
  - Single entry
  - Interoperable strategy
- **Success story**
  - Focused eGovernment effort since 2001, today one of the most advanced eGovernments
  - Detailed eGovernment strategy outlining priorities until 2021

**Belgium**
- **Promotion**
- **Child protection**
- **Signature service**
- **Wide eID acceptance**

**Estonia**
- **Data exchange**
- **E-vote**
- **Everyday use**
- **Transparency**

~ 400 government services fully integrated, more to follow
Great acceptance by the public

Cumulative worldwide eGov experience to guide a successful implementation in other countries

Source: SIA; BCG analysis; governments of UAE, Belgium and Estonia
Successful eGov implementations follow five key principles

1. **Benefits and communication**
   - Prioritize service digitization by expected benefit
   - Explicitly communicate benefits to relevant parties
   - Use performance-based program mgmt. with clear goals, objectives, short- and long-term plans and deadlines
   - Incentivize use of eGov solutions
   - Showcase successful examples

2. **Technology and infrastructure**
   - Ensure availability of trusted digital identity technology
   - Enforce technology and data standards for interoperability
   - Ensure wide availability of Internet in sufficient quality for eGov access

3. **Legal and process innovation**
   - View eGov introduction as an administrative step change, creating opportunities for large-scale change
   - Adjust government processes to reflect new reality of digital environment
   - Create fast track for passing eGov-related laws in order to keep momentum

4. **Transparency**
   - Set up portal website for citizens to view their data and its use
   - Regularly report on digitization effort, detailing successes, and additional improvement opportunities
   - Conduct regular third-party audits to verify effectiveness and security

5. **Central steering and commitment**
   - Chief Information Officer with end-to-end eGov responsibility
   - Central eGov agency for day-to-day project management

Source: SIA; BCG experience
### Implementation mindset based on key principles

1. **Benefits and communication**
   - Forward-looking, customer-centric
   - Open for citizens' feedback
   - High speed of transactions and service

2. **Technology and infrastructure**
   - Standardization
   - Ecosystem integration
   - Accessibility

3. **Legal and process innovation**
   - Innovative and integrated
   - Focus on high automation

4. **Transparency**
   - Privacy by design

5. **Central steering and commitment**

### Re-innovation of citizen journeys

- **Citizen journey Entitlements**
- **Citizen journey Finding information**
- **Citizen journey Permissions/licences**
- **Citizen journey ...**

### Resulting requirements in eGov capabilities

- Services **redesigned for digital**—not merely paper process online
- **Citizen-centric design** around how people use the service, not how government is structured
- Largely **instant, automated processing** of common interactions
- Detailed **tracking of service usage**
- Improvements based on **input from citizens and recorded usage data**
- **Learning effort** to prevent unnecessary claims and to detect fraud
- ...

### Source:
SIA; BCG experience
Three-step process to develop digital transformation roadmap

### Determine fitness gaps along eGov capability dimensions

<table>
<thead>
<tr>
<th>Digital marketing</th>
<th>Intuitive, on-the-go access</th>
<th>Channel consistency</th>
<th>Designed for user</th>
<th>Digital by default</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process excellence</td>
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<tr>
<td>Componentized product model</td>
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<td></td>
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<tr>
<td>Effective innovation process</td>
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<td>Fully integrated digital services</td>
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<tr>
<td>Real-time insight from rich, dynamic data</td>
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<tr>
<td>Flexible infrastructure and architecture</td>
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<tr>
<td>Digital security and privacy</td>
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<tr>
<td>Cross-functional collaboration</td>
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<tr>
<td>Steering of a flexible organization</td>
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</tbody>
</table>

1 2 3 4 5

### List of potential initiatives to close fitness gaps

- Establish process tracking mechanisms to offer insight into progress of request handling, and integrate with outsourced processes
- Establish self-service portals with standardized back end and customizable front end, and roll out across organization
- Break down processes into standard, modular, configurable components
- Fully digitize and automate all end-to-end processes, typically supported by an ERP system
- Define data processing strategy and derive roadmap for implementation of platform
- Arrange data provisioning with partners
- Develop a holistic view on areas in which analytical insight could be useful and should be applied

### Sequence and prioritize initiatives in roadmap

<table>
<thead>
<tr>
<th>2013</th>
<th>'14</th>
<th>'15</th>
<th>'16</th>
</tr>
</thead>
</table>

Examples

Current status
Status after implementing current programs
Aspired level

November 18, 2013 SIA eGov Study Nov 18 2013.pptx

Source: SIA; BCG experience
### Citizen journey—entitlement process in 2020

<table>
<thead>
<tr>
<th>Discover need/eligibility</th>
<th>Find service</th>
<th>Apply for service</th>
<th>Decision made</th>
<th>Set up ongoing/next steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maria gets a baby</td>
<td>Maria logs into the single online portal where she has already set up her account and profile</td>
<td>The application is pre-populated with her information</td>
<td>In more complicated cases, it will be checked by an officer</td>
<td>Maria is informed of the ongoing requirements to continue to receive the payment</td>
</tr>
<tr>
<td>Triggered by Maria updating her family details, she receives notice that she should be eligible for child support</td>
<td>She changes her family status and is directed to the appropriate form for requesting the entitlement</td>
<td>She enters new information and sends the application</td>
<td>In either case Maria is sent confirmation within one business day</td>
<td>Any required appointments etc. are made automatically in her calendar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Confirmation of the application is sent to her secure government inbox, if the case is simple, it will be automatically and instantly approved</td>
<td>Payments are automatically set up to Maria’s default bank account</td>
<td>The system automatically suggests other services (e.g., information about child care facilities)</td>
</tr>
</tbody>
</table>

Assumes a high degree of back-end standardization, automation, and integration
**Business cases to support each initiative**

**Example: developing fully automated customer self-service portals**

<table>
<thead>
<tr>
<th>Description</th>
<th>Assumed cost</th>
<th>Assumed benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of self-service portals in order to reduce number of customer requests handled via customer service center and to increase speed of service</td>
<td>Design of a new architecture for back end</td>
<td>$0.50M</td>
</tr>
<tr>
<td></td>
<td>Design of new customer self-service portals</td>
<td>$0.50M</td>
</tr>
<tr>
<td></td>
<td>Implementation of design</td>
<td>$3.00M</td>
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<tr>
<td></td>
<td><strong>One-time cost</strong></td>
<td><strong>$4.00M</strong></td>
</tr>
<tr>
<td></td>
<td>Personnel cost for ongoing development team</td>
<td>$100K × 5</td>
</tr>
<tr>
<td></td>
<td>Annual hardware and maintenance cost</td>
<td>$0.25M</td>
</tr>
<tr>
<td></td>
<td><strong>Annual operational cost</strong></td>
<td><strong>$0.75M</strong></td>
</tr>
<tr>
<td>Requires a one-time design and implementation of new, fully automated back end architecture to which multiple front-end layers can connect and interact</td>
<td><strong>Number of customer service requests prevented</strong></td>
<td>240K</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td><strong>Yearly number of customer service requests</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>% of requests that will be handled through self-service</strong></td>
</tr>
<tr>
<td></td>
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<td><strong>Cost per customer service request</strong></td>
</tr>
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<tr>
<td>Additionally, ongoing development costs to design portals for new devices and touch points</td>
<td><strong>Annual cost saved</strong></td>
<td>$6.00M</td>
</tr>
<tr>
<td></td>
<td><strong>One-time cost, annualized over 5 years</strong></td>
<td>$0.80M</td>
</tr>
<tr>
<td></td>
<td><strong>Annual operational cost</strong></td>
<td>$0.75M</td>
</tr>
</tbody>
</table>

**Cost and benefits**

- Annual cost saved: $6.00M
- One-time cost, annualized over 5 years: $0.80M
- Annual operational cost: $0.75M

**Annual economic profit**: $4.45M

In addition, faster speed of service and lower potential for errors lead to higher customer satisfaction, higher customer advocacy.