



# Industrial Innovation Strategies, Information Security and Innovation

Innovation potential and barriers  
of security products and services

A perspective on Security Innovations (in Europe)

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LSEC

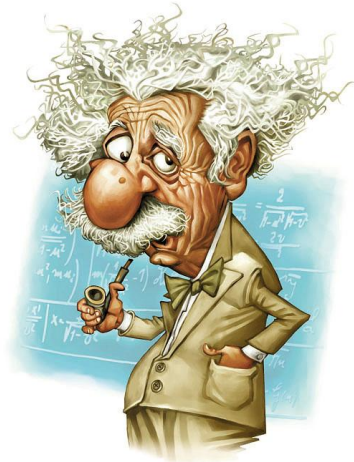
[www.securityinnovationnetwork.com](http://www.securityinnovationnetwork.com)



When you always do what  
you've always done,

You will always get what  
you've always got !!

An innovator, A. Einstein



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## Strategic Innovation - Objective

### 1. Value Creation ?

A firm creates value when it offers customers products or service whose perceived benefits to customers exceed the cost of providing the benefits.

A firm captures value when it profits from it.

### 2. Strategy ?

Strategy is the creation of a unique and valuable position, involving a different set of activities (Michael Porter, 1996)

Strategy is an overall plan for deploying resources to establish a favorable position vis-à-vis competitors (Robert Grant, 2002)



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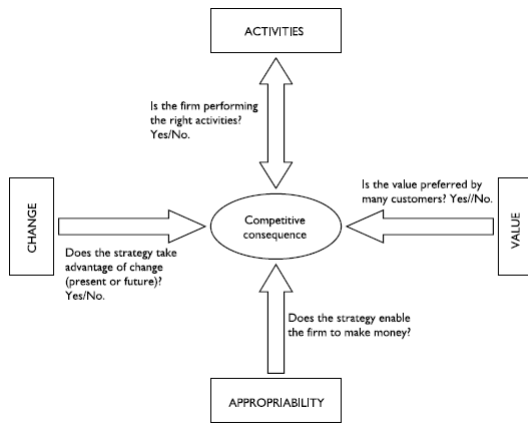
## Strategic Innovation - Objective

	<i>First-mover advantage</i>	<i>Activities: Is the firm performing the right activities? Does it have what it takes (resources and capabilities) to perform the activities?</i>	<i>Value: Is the value created by the strategy unique, as perceived by customers, compared to that from competitors?</i>	<i>Appropriability: Does the firm make money from the value created?</i>	<i>Change: Does the strategy take advantage of change (present or future) to create unique value and/or position itself to appropriate the value?</i>	<i>Competitive consequence</i>
Strategy 1	Yes	Yes	Yes	Yes	Yes	Sustainable competitive advantage
Strategy 2	Yes	Yes	Yes	Yes	No	Temporary competitive advantage
Strategy 3	Yes	Yes	Yes	Yes/No	Yes	Temporary competitive advantage
Strategy 4	Yes	Yes	No	No	No	Competitive parity
Strategy 5	No/Yes	No	No	Yes	No	Competitive parity
Strategy 6	No	No	No	No	No	Competitive disadvantage
Strategic action	What can a firm do to reinforce the Yeses and reverse or dampen the Noes, and what is the impact of doing so?					



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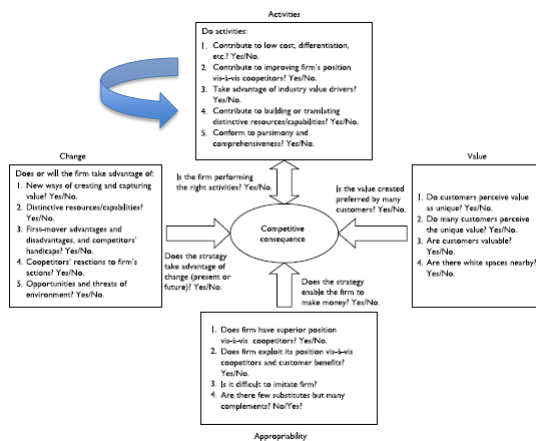
## Strategic Innovation – AVAC Framework



Source : Strategic Innovation, Allan Afuah, 2009

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## Strategic Innovation – AVAC Framework

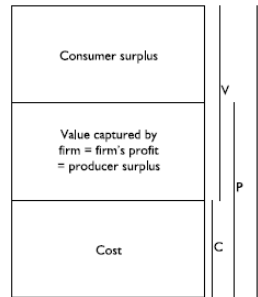


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## Strategic Innovation – Creating Value

### Key

$B$  = benefits perceived by customer  
 $C$  = cost of providing benefits  
 $P$  = price paid by customer  
 $V = B - C$  = value created  
 Value captured by firm = firm's profits  
 $= P - C$  = producer surplus  
 Customer surplus =  $B - P$



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## Strategic Innovation – Creating Value

1. First mover advantages (earning and mainting)
  1. Total available market preemption
    1. Scale Economies
    2. Relationships with Coopetitors
  2. Lead in Technology, Innovation and Business Processes
    1. Lead in Technology and Innovation
    2. First at customers
      1. Switching cost
      2. Brand mindshare
    3. First to establish a System if Activities
2. First mover disadvantages
  1. Free-riding on FM investments : example standards, benchmarking, networking
  2. Technological and Marketing Uncertainty :
    1. Changes in Technology or customer needs
    2. First mover Inertia



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## Strategic Innovation – Creating Value

Table 6.2 Rank Ordering First-mover Advantages

First-mover advantage	Activities: Does the firm have what it takes to perform the activities to build and exploit the first-mover advantage?	Value: Does the first-mover advantage make a significant contribution towards the value that customers perceive as unique compared to what competitors offer?	Appropriability: Does the first-mover advantage make a significant contribution to profits?	Change: Does the first-mover advantage take advantage of change to create and appropriate value?	Strategic consequence
Advantage 1	Yes	Yes	Yes	Yes	Sustainable competitive advantage
Advantage 2	Yes	Yes	Yes	No	Temporary competitive advantage
Advantage 3	Yes	Yes	No	Yes	Temporary competitive advantage
Advantage 4	Yes	Yes	No	No	Competitive parity
Advantage 5	No/Yes	No	Yes	No	Competitive parity
Advantage 6	No	No	No	No	Competitive disadvantage
Strategic action	What can a firm do to reinforce the Yeses and reverse or dampen the Noes, and what is the impact of doing so?				

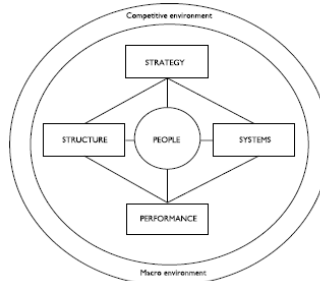


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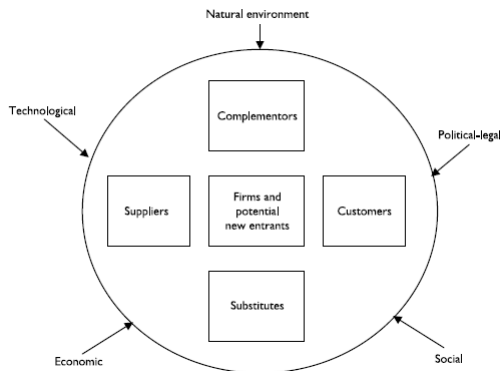
## Strategic Innovation – People’s Roles in S3PE

1. Top Management : beliefs, biases, assumptions
2. Champions
3. Sponsors
4. Gatekeepers
5. Project Managers



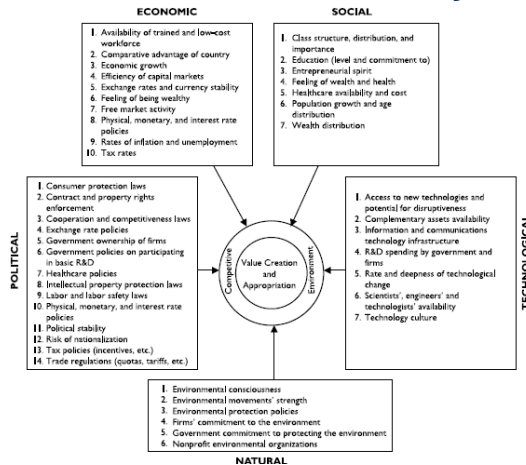
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## Strategic Innovation – macro-economic



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## Strategic Innovation – PEST Analysis



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## Strategic Innovation – Opportunities & Threats

### 1. New replacing old

Airplanes	Sail boats, steam boats, trains
Automobiles	Horse-driven carts
Computers	Spike abacus, slide rules
Contact lenses	Eye glasses
Cotton, silk, polyester, nylon	Grass, bark, animal hides
Digital audio player (MP3)	Record player, eight track, cassette tape, compact disc
Digital photography	Artists, film-based photography
Discount brokers	Traditional brokers
Digital video disk (DVD)	Veneer records, magnetic tapes, compact discs
Electric and gas stoves	Firewood cooking spaces
Electricity	Whale oil (for lighting), wood, coal, gas
Electronic banking	Brick-and-mortar-based banking
Flat panel displays	Cathode ray tube (CRT) for computer screens, TVs, etc.
Genetically engineered insulin	Pig pancreas-derived insulin
Indoor plumbing	Outdoor services
International ATMs	Traveler's checks
Internet radio TV	Radio, TV
iPod	Walkman
Jet engines	Propeller engine
Mechanical cash registers	Electronic point of sale registers
Money and financial services	Barter system
PCs	Minicomputers
Refrigeration	Hauled ice
Small Japanese cars	Large American cars
Steel	Brick and stone
Telephone	Smoke signals, drums, people, telex
Electronic watches	Mechanical watches



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## Strategic Innovation – Opportunities & Threats

### 2. Disruptive Technologies

Disruptor	Disrupted
Compact disc	Cassettes and records
Desktop publishing	Traditional publishing
Digital photography	Chemical film-based photography
Distribution of software by Internet	Distribution through distributors
e-mail	Snail mail
High-speed CMOS video sensors	Photographic film
Hydraulic excavators	Cable-operated excavators
Internet	Electronic data interchange (EDI)
Large-scale integration (LSI)	Small-scale integration
Minicomputers	Mainframes
Mini-mills for steel	Integrated steel mills
Online auctions	Offline auctions
PCs	Minicomputers
PowerPoint-type software	Drafting software
Small-scale integration	Discrete components
Steam engine, electric motor, and internal-combustion engine automobiles	Horse-driven cart
Steamships	Sailing ships
Table-top copiers	Large Xerox-type copiers
Telephone (originally worked for only 3 miles, limited to local phone calls)	Telegraph (Western Union) long distance
Transistor radios	Vacuum tube radio sets
Transistors	Vacuum tubes
Wal-Mart's discount stores in small rural southwestern towns	Discount retailing in cities
Wireless phone service	Fixed-wire phone service



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## Strategic Innovation – Opportunities & Threats

### What can incumbents do to better profit from disruptive technologies

Convince upper-level management to see technology as a problem

Create autonomous unit to pursue disruptive technology

Develop the product internally when still highly differentiated

Outsource when it becomes commodity

Organize business units as a function of the problem / solution that customers want and not as a function of how data is collected

Use complementary assets as incumbents to exploit the disruptive technology



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## Strategic Innovation – Key Learnings

(Information) Security as :

Contribute to lower cost, differentiation, better pricing, more customers and better sources of revenues

Contribute to improving the firm's position vis-à-vis Competitors

Take Advantage of Industry Value Drivers

Build and Translate Distinctive Resources / Capabilities

Take advantage of First Mover Advantages and Disadvantages and Competitor Handicaps

Identify and take advantage of Opportunities and Threats of The Competitive and Macroenvironment



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## Security & Innovation



## Innovation ?

1. What is innovation? We don't really have a good fix on the concept. We know it when we see it. But this much is clear: it encompasses more than just scientific or technological breakthroughs
2. Apple's innovations? It is not a company that focuses on pathbreaking science and spews out new inventions and patents. The 2010 Booz & Co. ranking of companies by their expenditures on research and development places Apple 81st. As a percentage of its revenue, the company spends less than half of what the typical computer and electronics company does and a fifth of what Microsoft spends.
3. And then there is DARPA, the Defense Department's venture-capital arm, which has had an astonishing string of successes, helping fund stealth technology, the beginnings of the global-positioning system and, most famously, the Internet

\*Fareed Zakaria, Future of Innovation, Time, June 5, 2011



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## Is there innovation in information security?

1. Security is reactive by nature : “With very few exceptions, we rarely invest in security to reduce risks we aren’t currently observing. If it isn’t a clear, present, and noisy danger, it usually finds itself on the back burner.”
2. “The pain must pass a threshold to justify investment, and an innovator can only survive for so long without customer investment. Innovation is by definition almost always ahead of the market, and must create its own market to some degree. This is tough enough for cool things like iPads and TiVos, but nearly impossible for something less sexy like security. I love my TiVo, but I only appreciate my firewall.”

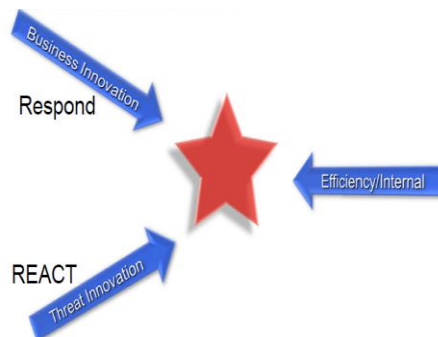
Rich Mogull, CEO Securosis



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## Security Innovation?

- No matter how much we spend, the bad guys always break in.
- We spend more on AV and firewalls than all the rest of security combined
- Auditors define our security programs
- We are reactive, but not responsive
- Vendors keep selling us crap we don’t need, that doesn’t work, and costs too much to manage



Rich Mogull, CEO Securosis





## Barriers of security products & services\*

1. Complexity of security : network, systems, devices, apps, programming, ... - (inability for security to be simple?)
2. Majority of sales still in some sectors : finance, ict, government, ...
3. Sales today mainly driven by regulations & compliance
4. Security people are typically innovation averse
5. Lacking sufficient “positive” business drivers, business sometimes risk-agnostic
6. Security is becoming a board level discussion
7. Additional cost of security (in € and resources)
8. Internal security are being regarded as “blocking, policing, ...” counterproductive
9. Looking for “standards”
10. Not invented here
11. Constraints in time - resources
12. Lack of “in house” expertise
13. Lack of management knowledge, experience, interest, ...
14. ....

\* from experience, user testimonials, vendor testimonials



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## There is innovation in Information Security

1. Innovation Identifiers :
  1. LSEC Innovation Awards
  2. (ISSE ) Teletrust - Innovation Awards
  3. The Global Security Challenge / Omnicompete
  4. RSA Innovation Sandbox
  5. ...
2. Some Innovations



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## European Security Innovations

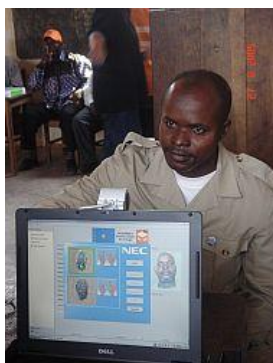
Belgian eID System : 11 million citizens  
eID ecosystem



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## European Security Innovations (made in Belgium)

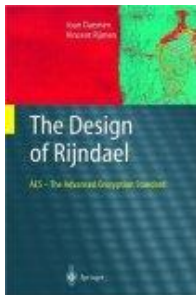


Registry in Ivory Coast  
eVoting in Congo  
BioDev2



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## European Security Innovations (made in Belgium)



Rijndael : AES

Worldwide Standard Encryption  
Mechanism



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## European Security Innovations (made in Belgium)



JPEG 2000

Encrypted Digital Cinema Distribution

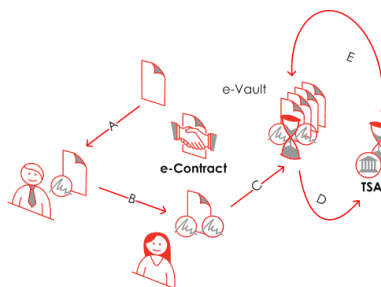


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## European Security Innovations (made in Germany)



Secusmart : encrypted voice communications  
(winner TTT Innovation Award '08)

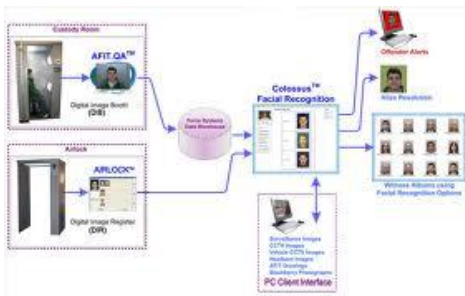


CA Bridge :  
interconnecting CA's  
across industries



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## European Security Innovations (made in UK)



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## Innovation Support

[www.securityinnovationnetwork.com](http://www.securityinnovationnetwork.com)



## About the European Security Innovation Network

Aim is to **expand** the existing security sector cluster infrastructure within North West Europe to increase opportunities for small and medium-sized businesses for **new innovations**, and to **improve competitive advantage** in the global security market



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## Participating Clusters

- SITC (Security Innovation and Technology Consortium): a not-for-profit membership organisation dedicated to supporting the development of innovative and technologically sophisticated security solutions, backed by the South East England Development Agency (SEEDA) : [www.securityintech.com](http://www.securityintech.com)
- Systematic Paris Region : A French competitiveness cluster bringing together 500 key players in the Ile-de-France region working in the field of software-dominant systems and focusing on markets with a strong social dimension : [www.systematic-paris-region.org](http://www.systematic-paris-region.org)
- LSEC: A Flemish non-profit organization, which has offered support to the Belgian information security sector in Belgium and abroad since 2002 : [www.lsec.be](http://www.lsec.be)
- TeleTrusT Deutschland: a non-profit association in Germany promoting the trustworthiness of information and communication technology in open system environments : [www.teletrust.de](http://www.teletrust.de)
- Cluster SEGURIDAD (ES)
- ...

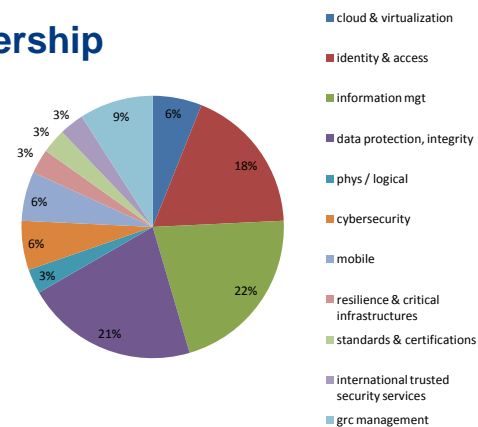


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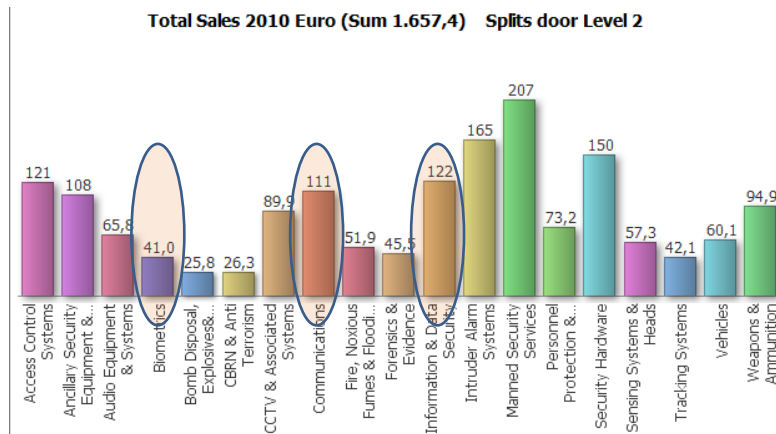


## Overview of the Membership

- more than 1350 companies registered
- reaching over 10.000 security professionals in Europe
- collectively representing over 10 billion € market
- Professional services, products, solutions, engineering, contracting, outsourcing, ...
- more than 10 leading universities and research centers involved



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## Benefits to participate for Industry Experts:

- Innovate in Security, Innovate through Security
- Join the Security Innovation Network and
  1. Participate in the international thematic discussion groups
  2. Build trust and confidence with international colleagues
  3. Share expertise and Learn from peers and sector colleagues
  4. Discover R&D opportunities
  5. Join international research & development projects
  6. Join the international centralized data system of suppliers and experts
  7. Cross-domain perspective (infrastructure, citizen & information)
  8. Find partners, peers & industry relations
  9. Join the public-private discussion
  10. Participate in joint international Tenders



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## Next Steps :

1. Sign Up for :
  - European Security Network Database
  - Access to market data
  - Next local STIG activities
2. Contact us for support on innovation ideas or R&D project
3. Looking for peers, partners in the same field of expertise
4. Expand your network

[join@securityinnovationnetwork.com](mailto:join@securityinnovationnetwork.com)



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