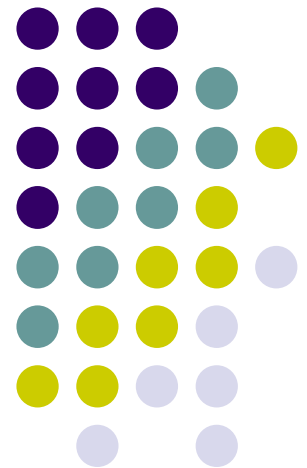


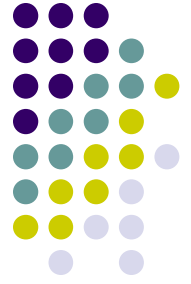
# Smart Cybersecurity and Smart City

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**Bayu Setyatmoko, ST., MT., MTCNA, CEH**  
**(Email : bayusetyatmoko@gmail.com)**  
**Bidang Persandian Diskominfo Pati**

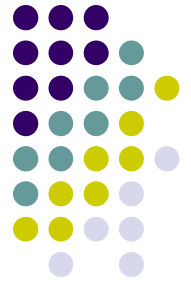
**Pati, 22 Nopember 2017**





*"A smart sustainable city (SSC) is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social and environmental aspects"*

<https://www.itu.int/en/ITU-T/focusgroups/ssc/Documents/Approved-Deliverables/TR-Definitions.docx>



*A "smart city" is one that exploits technology and innovation to make efficient use of resources and reduce the size of the ecological footprint. This idea is here to stay. The term has a technological origin, but it is also a question of being innovative. What services can be offered to citizens to increase their quality of life? Technology is just one aspect. A high-tech city is not necessarily a smart city. Many urban planners have realised that cities are about people not technology. I don't know whether the term "smart city" will endure. Perhaps it will become "future city" or "innovative city", but the idea is the same.*



## Intelligent city

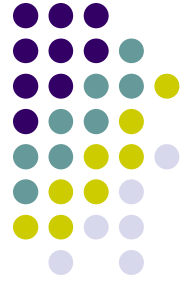
- Applications of ICT in the communication between city management and local residence
  - ensure to give and get information
  - e-administration

## Smart city

- ICT as city management tool

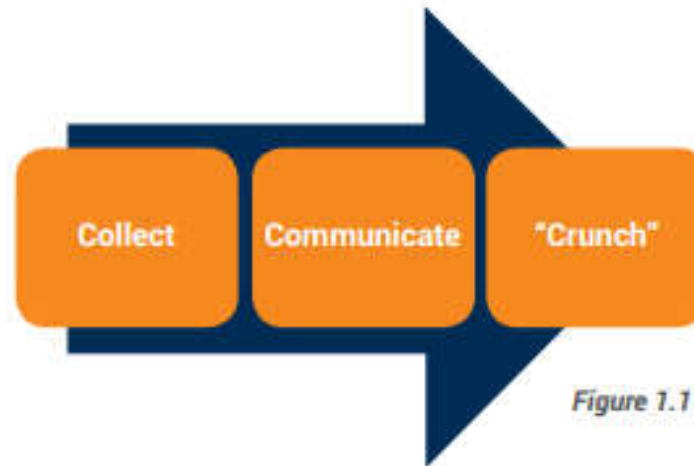
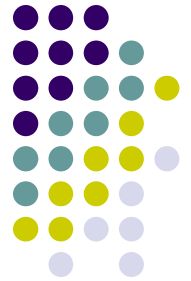
STRATEGY, SUSTAINABILITY, COST-EFFECTIVENESS,  
RELIABILITY, TRANSPARENCY, COOPERATION

## Smart City Version



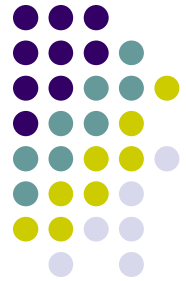
- ❑ Smart Cities 1.0 :  
Technology Driven
- ❑ Smart Cities 2.0 :  
Technology Enabled, City-LED
- ❑ Smart Cities 3.0 :  
Citizen Co-Creation

## 3 Core Function of Smart City

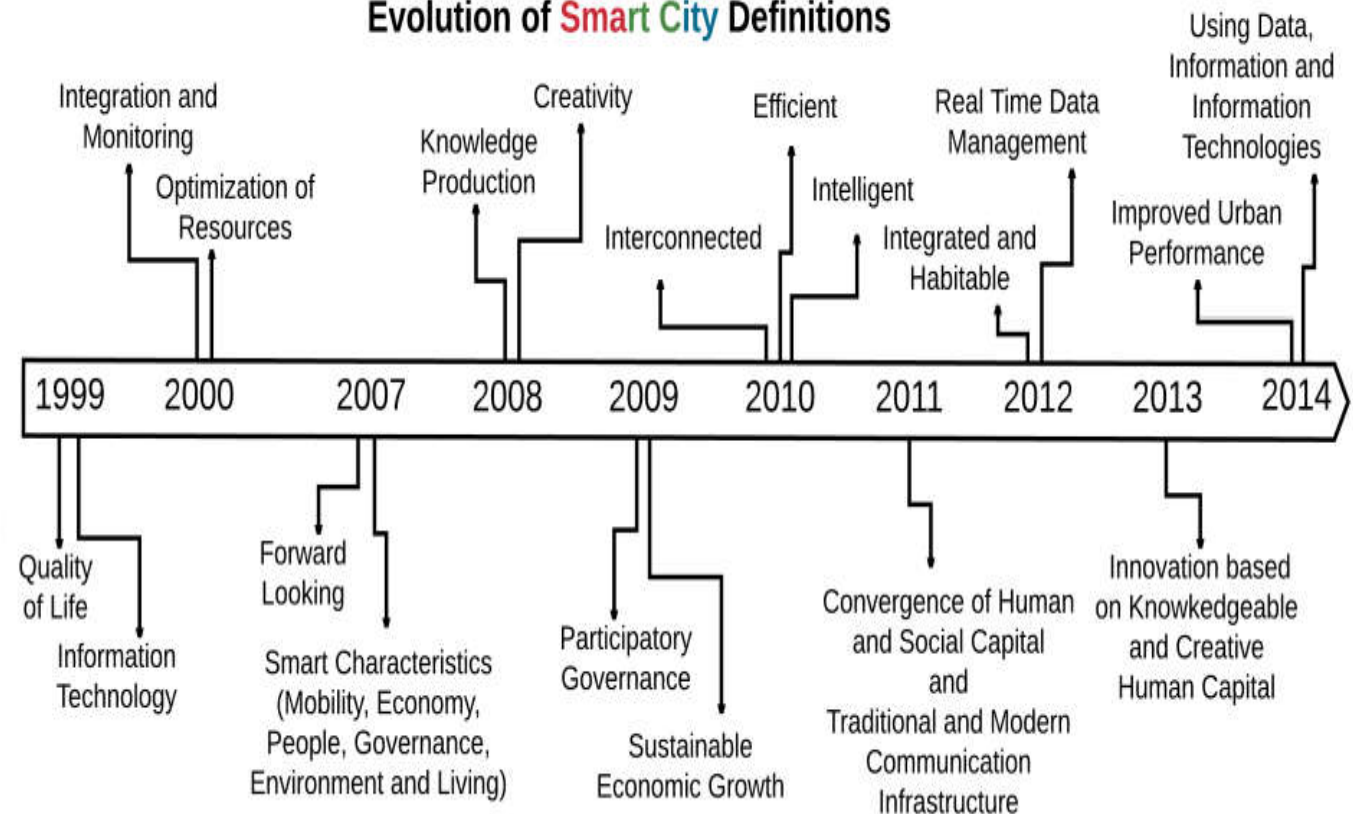
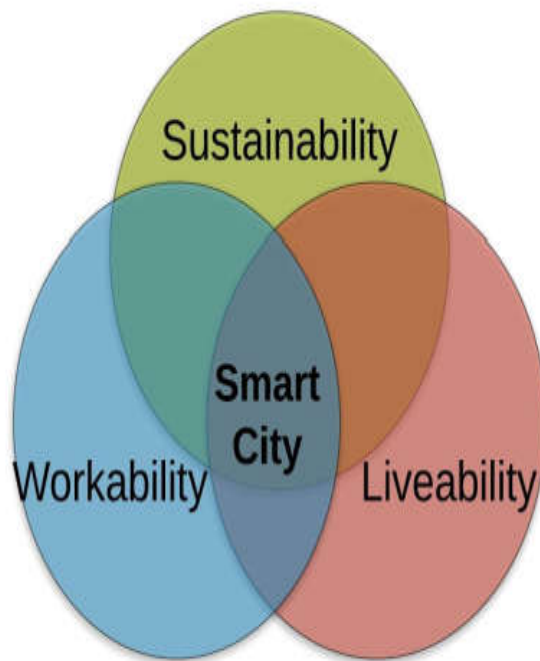


- 1 Collect**  
*information about current conditions across all responsibility areas (power, water, traffic, weather, buildings, etc.).*
- 2 Communicate**  
*information, sometimes to other devices, sometimes to a control center and sometimes to servers running powerful software.*
- 3 Crunch**  
*data, analyzing it to present information, to perfect (optimize) operations and to predict what might happen next.*

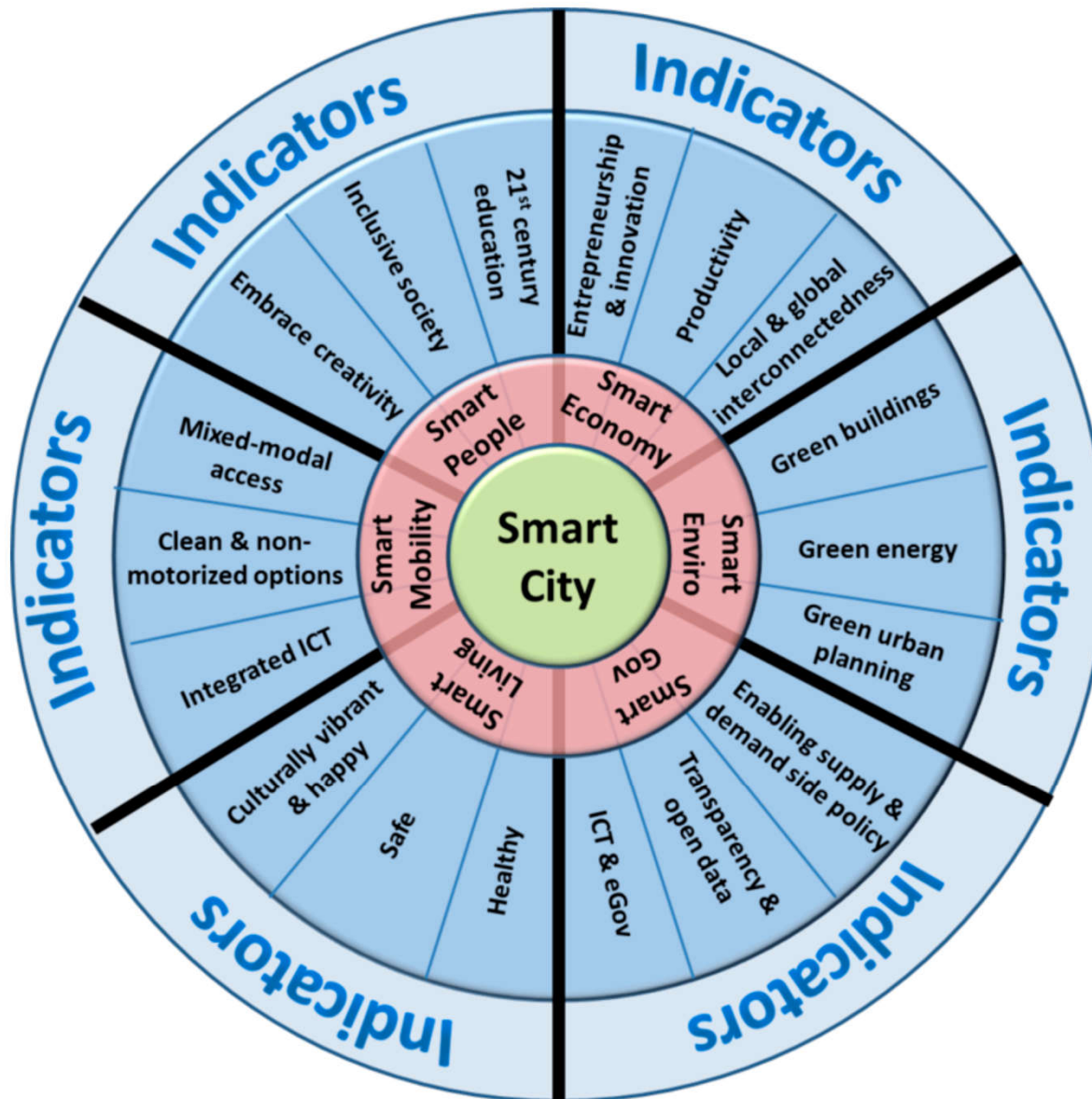
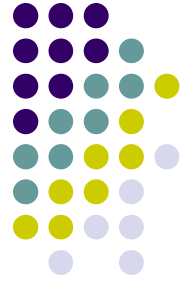
# Evolution of Smart City Definition



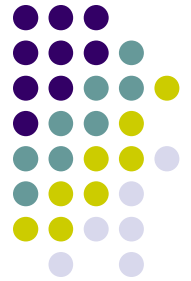
## Evolution of Smart City Definitions



# Smart City Wheel (Cohen, 2012)







## □ Smart Government

Adanya akuntabilitas dan keterbukaan kebijakan pemerintah.

Memiliki 3 sub domain :

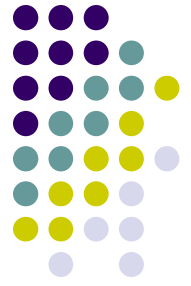
- Infrastruktur ICT & eGov yang memadai
- Online services (supply & demand) yang baik
- Open government (melalui open data)

## □ Smart Economy

Adanya dukungan teknologi utk meningkatkan ekonomi lokal agar dapat bersaing dengan ekonomi global.

Memiliki 3 sub domain :

- Produktifitas yang meningkat
- Opportunity (peluang usaha) bagi entrepreneurship
- Hubungan bisnis lokal & global yang baik



### □ **Smart Environment**

Adanya “green urban planning” yang berbasiskan TIK.

Memiliki 3 sub domain :

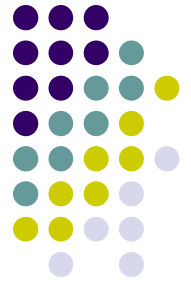
- Smart Building (bangunan pintar berbasiskan teknologi TIK)
- Green Urban Planning (tata ruang berwawasan lingkungan)
- Resources Management (tata kelola “green energy”).

### □ **Smart Mobility**

Adanya efisiensi dan layanan transportasi publik berkualitas.

Memiliki 3 sub domain :

- Clean Transportation (transportasi rendah kadar polusi)
- Mixed Model Access (integrasi berbagai model transportasi)
- Integrated ICT (integrasi sistem lalu lintas, traffic control, dsb)



### □ Smart Citizen

Pengembangan SDM yang menghasilkan inovasi TIK berkualitas

Memiliki 3 sub domain :

- Education (perbaharui pengetahuan TIK terkini)
- Inclusive Society (komunitas masyarakat saling berbagi ilmu)
- Embrace Creativity (pengembangan kreativitas warga)

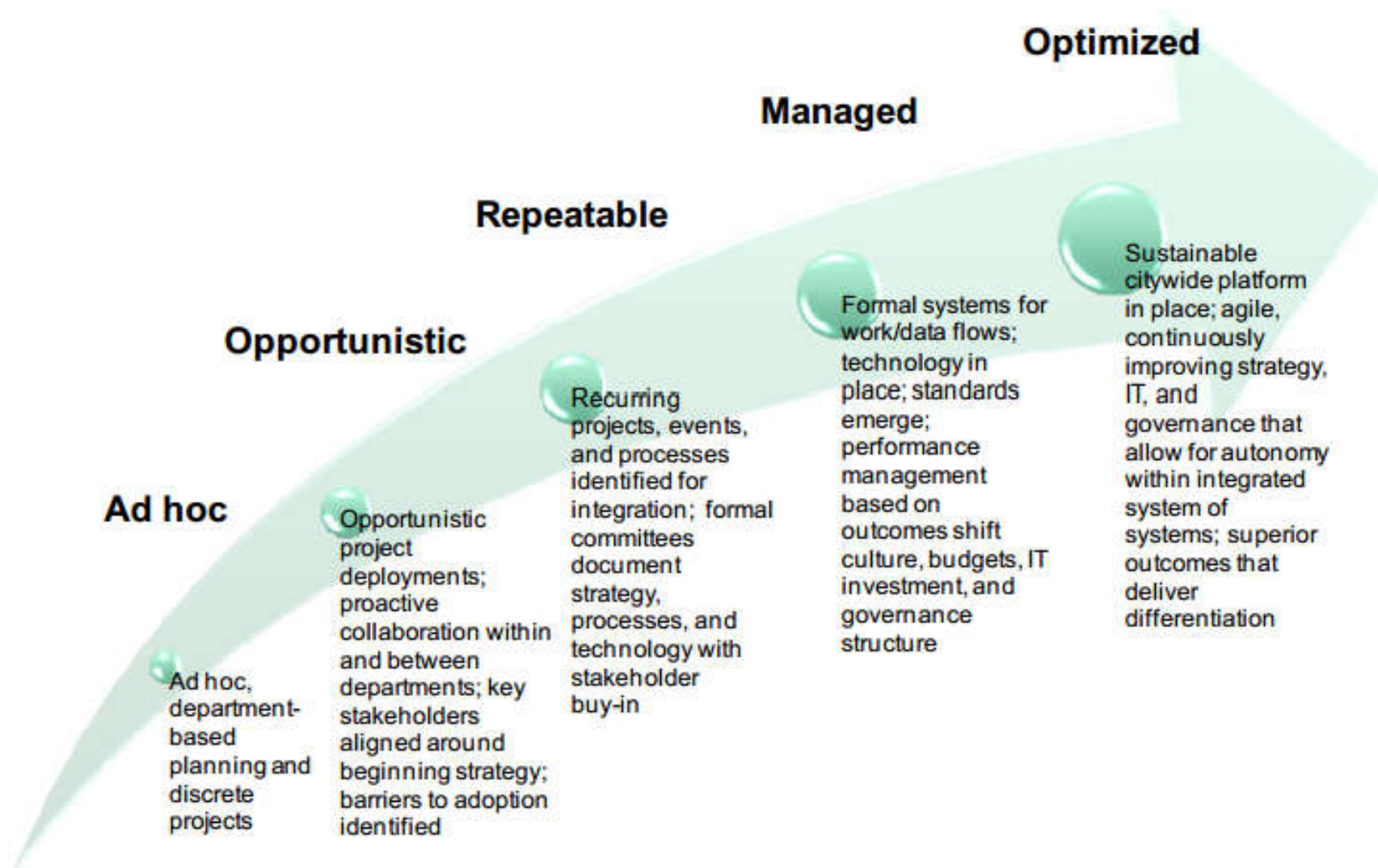
### □ Smart Living

Peningkatan kualitas hidup warga melalui pemanfaatan TIK

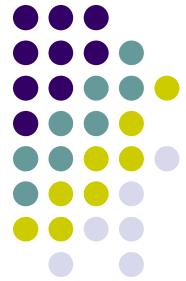
Memiliki 3 sub domain :

- Healthy (jaminan terhadap kesehatan warga)
- Safety (jaminan terhadap keselamatan jiwa warga)
- Happiness (kebahagiaan warga menjalani aktivitas sehari2x)

# Smart City Maturity Model



# Smart City Maturity - Explain

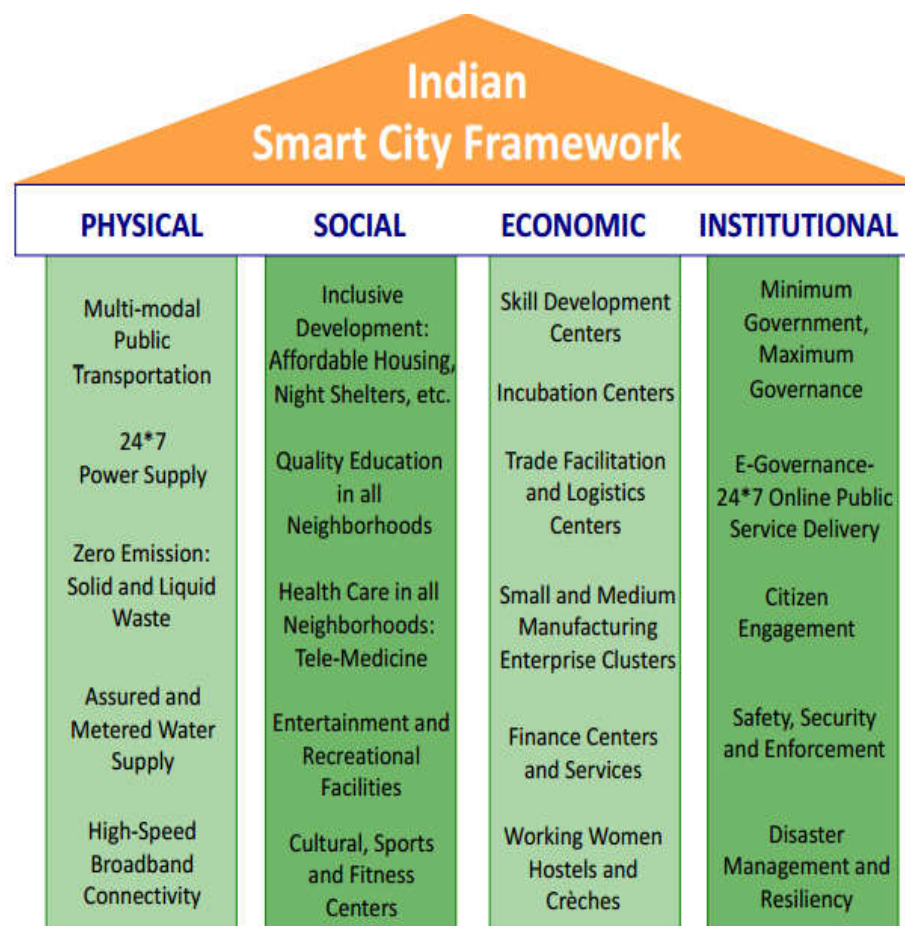


	Ad hoc	Opportunistic	Repeatable	Managed	Optimized
<b>Key characteristic</b>	Siloed	Intentional	Integrated	Operationalized	Sustainable
<b>Goal</b>	Tactical services delivery	Stakeholder buy-in	Improved outcomes	Prediction and prevention	Competitive differentiation
<b>Outcome</b>	Proof-of-concept and business case development via ROI from pilot projects	Cross-organization deployments and development of foundational strategy and governance	Repeatable success in project process and outcomes across multiple organizations	Enterprisewide strategy, process, data, and so forth bring improved service delivery via adaptive sense-and-respond systems	Agility, innovation, and continuous improvement in service delivery bring competitive advantage

# Case Study - Indian



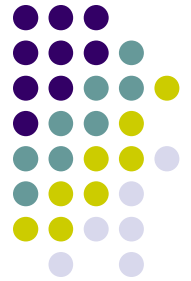
TRADITIONAL	INDIAN CITY	SMART
Unplanned and Disorganized	<b>PLANNING</b>	Coordinated, Holistic and Sustainable
Poorly Interconnected	<b>INFRASTRUCTURE</b>	Highly Systematic
Minimal / Limited	<b>CITIZEN PARTICIPATION</b>	Two-way Communication between Government and People
Isolated, Unsystematic and Fragmented	<b>SOLUTION PROVIDED</b>	Centrally Planned, Deployed across City Departments and Projects
Ineffective Management and Increased Costs	<b>RESOURCE UTILIZATION AND COSTS</b>	Optimal Resource Utilization with Cost-Effective technologies
High level	<b>TRAFFIC CONGESTION AND POLLUTION</b>	Improved Traffic Management and Low Pollution
Negligible Sharing and Poor Coordination	<b>DATA SHARING AND COORDINATION BETWEEN GOVERNMENT DEPARTMENTS</b>	Improved Sharing and better Coordination



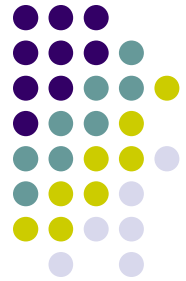
Source: UK Trade and Investment (2015).



# Cost Software Security Measure



# Aspek Smart Cybersecurity







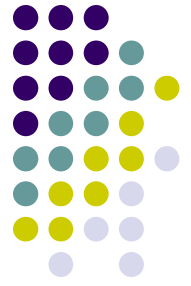
## ■ Smart Cybersecurity

Adanya "security awareness" (kepedulian thd keamanan informasi) pada semua orang (baik pejabat atau staf) di suatu lingkungan organisasi (pemerintah/swasta).

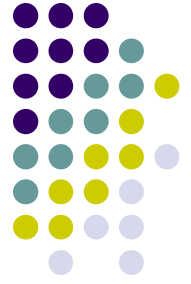
Memiliki 7 sub domain :

- (a).Software Development (secure coding, desain s/d deploy)
- (b).Network Management (device patching, secure config)
- (c).O/S Management (kernel patching, secure config)
- (d).Operational Management (Backup, Restore, DRC)
- (e).Risk & Incident Management (Asses, Analys, Mitigation)
- (f).Policy & Access Control (Physical, System, App, Data)
- (g).Organization & Regulation (SOP, Reporting, Law)

## Sumber Referensi (1)



- (1). The Emergence of the Urban Entrepreneur, Boyd Cohen (2016)
- (2). The Way Out, Byod Cohen (2012)
- (3). Climate Capitalism, Boyd Cohen (2011)
- (4). <https://www.fastcompany.com/user/boyd-cohen>
- (5). <https://www.fastcompany.com/3038818/the-smartest-cities-in-the-world-2015-methodology>
- (6). <https://www.fastcodesign.com/1680538/what-exactly-is-a-smart-city>



(7). <https://smartcitiescouncil.com/resources/smart-city-index-master-indicators-survey>

---- Smart City 2014 Index Master Indicators Survey

---- Smart City Self Assessment / Benchmark (62 indicators)

(8). <https://www.iso.org/standard/62436.html>

---- ISO 37120:2014 (Sustainable development of communities,

---- Indicators for city services and quality of life).



(9). <http://www.innovation-cities.com/innovation-cities-index-2016-2017-global/9774>

---- City innovation 10th rankings, 2016-2017 (192 indicators).

---- 1.London, 2.New York, 3.Tokyo, 4.San Francisco, 5.Boston

---- 6.Los Angeles, 7.Singapore, 8.Toronto, 9.Paris 10.Vienna

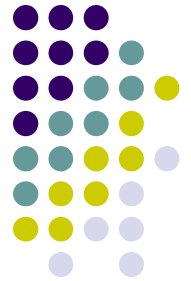
---- 11.Seoul, 12.Amsterdam, 13.Barcelona, 14.Sydney, 15.Munich

---- 28.Dubai, 30.Beijing, 90.Mumbai, 92.Kuala Lumpur, 218.Jakarta

(10). <https://www.itu.int/en/ITU->

[T/focusgroups/ssc/Documents/Approved-Deliverables/TR-Definitions.docx](https://www.itu.int/en/ITU-T/focusgroups/ssc/Documents/Approved-Deliverables/TR-Definitions.docx)

## Sumber Referensi (4)

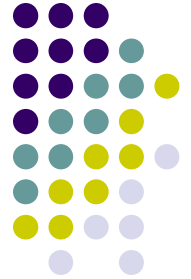


(11).<http://datasmart.ash.harvard.edu/news/article/5-ways-cities-can-make-cybersecurity-a-top-priority-best-practices-from-lea>

(12).<https://www.pwc.com/us/en/cybersecurity/broader-perspectives/smart-cities.html>

(13).[https://github.com/bayusetyatmoko/security/blob/master/Smart\\_Cybersecurity.pdf](https://github.com/bayusetyatmoko/security/blob/master/Smart_Cybersecurity.pdf)

(14).[https://github.com/bayusetyatmoko/security/blob/master/SMKI\\_Pati\\_Full.pdf](https://github.com/bayusetyatmoko/security/blob/master/SMKI_Pati_Full.pdf)



“Smart City needs a lot of Smart  
and Innovative People”