

# Smart city or responsive city?

-Raed Tawil

## PARADIGM SHIFT

Thomas Kuhn introduced the concept of "paradigm shift" in his book *The Structure of Scientific Revolution*. Kuhn argues that scientific advancement is not evolutionary but rather a "series of peaceful interludes punctuated by intellectually violent revolutions", and in those revolutions, "one conceptual world view is replaced by another."

## It is all about the data, stupid!



- Smart city planning is not all about technology; there are more aspects to consider. Technology is not but a tool to improve municipal management and governance, among other city government activities and applications.
- Most digital advances in cities focus on city operation rather than people or what they can use, touch, and experience.

## Digital smart responsive

*Collect data → process data → real time action*

We observe and collect data and analyze what we collected so that we can plan and design to build and make educated decisions. Similarly applicable is the digital marketing frame work  
*See → think → do.*

Sensors and devices are almost everywhere: collecting data from traffic to construction, intrusion detections to shares and stocks.

All are silos of points of data collection that need to be harnessed and analyzed. This data represents a means to measure so that we can plan and develop based on real time activities.

## See – digital city

Today, in major cities, we have sensors everywhere. Everything has a sensor: from the front door of our home to the traffic light and the street lights down the street to the mall.



## Order from chaos

A closer look at IT systems within an enterprise will reveal a complex set of heterogeneous systems, most of which are islands of automation. The full reliance of businesses on these systems to conduct their operations mandates them to be harmonious with the changing business operations they support, to achieve maximum agility and interoperability.

It is only through a methodical and holistic approach that we can bring order to IT chaos. We offer fresh and methodical solutions that help organizations realize their mandates.

*In the world of IT, entropy dominates and chaos rules.  
We **RKTEK** order from chaos.*

## Think - smart city

Collected data allows us to create simulation models and algorithms, providing insight and prediction of behaviors, causes, and effects. This allows us to understand what we measure and how we can plan for the future, setting the stage for artificial intelligence (AI) to play a major role in responsive city evolution.

## Do - responsive city

A responsive city is a city where residents and visitors experience real time interaction, enriched with interactive applications, based on the continuous flow of real-time data being collected (from sensors of the digital city), trends and behavior (from simulation and predictions of the smart city). Responding to needs of the residents is a greenfield for new interactive application development. Today, we see Uber and Lyft proposition themselves based on anticipated traffic and transportation trends from data they gather and hold closely. Street lights and road signs adjust and react to time of day or night all based on behavior and anticipated traffic.

To be a responsive city, responses should reflect the needs and wants of its residents and visitors. Each city is unique from that perspective; type of residence varies from city to city, so do visitors. Residence downtown Manhattan are not the same as the ones downtown Vegas or Miami and neither are their visitors. Behaviors and demands change by time of day, season, age group, income, and mood.

A responsive city is a dynamic city. The city responsiveness is measured by the speed in which it can adjust its use of technology and external resources and organize its people as a result of change in its environment. To respond instantaneously to changing residents' needs, a responsive city must innovate rapidly and immediately tailor services to its residents' demands.

To be responsive is to interoperate. To interoperate is to decouple. It is not integration at this stage of the game. It is unification of systems, organizations, people, and processes that makes for an interoperative environment.

RKTEK provides techniques for the analysis and design of an interoperability framework, a fit for purpose approach suited for a responsive city.

The approach is driven at its core by roles and responsibilities, which in turn leads to better data collection and protection. The responsibility maps and profiles provide for clarity, accountability, and better KPIs to name a few.



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