

# Getting Hold of Smart Cities

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L to R: Karuna Gopal, Ray Wang, Rajeev Dubey, Avinash Vashistha, R Chandrashekhar and BVR Mohan Reddy

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## **Rajeev Dubey, Managing Editor, Business Today**

Ever since the government of India decided to create 100 Smart cities, it has triggered a race among different cities to come and seek approvals and get certified as a Smart City. But the big question is what really is a smart city? The government has introduced a definition of a Smart City in the white paper it has put out for discussion. The white paper has defined them as "cities which have smart, intelligent, physical, social, institutional and economic infrastructure while ensuring centrality of citizens in a sustainable environment".

IT companies look at it from the technology point of view when it comes to governance and the government looks at it from citizen centric point of view. My first point to the panel is do you agree with the way this is being defined because this is really going to be the fulcrum around which the entire government effort at Smart City creation and Smart Cities certification will revolve.

I would find it very hard to argue with that definition in terms of the desirability of that but the critical question really is in known the next level of detail. I mean what does it mean in terms of the way, the services are provided when it is water or power or roads or safety or traffic management and in what way is it going to be different from what has been done elsewhere.

So how this gets translated in those terms is what is critical, second, from the point of view of this industry, the third level of question is what is the role of ICT in making the difference, in ensuring for example that the water supply is done efficiently, that the billing is done efficiently, the leakage has been prevented, etc. Or, the same of course good for each of those sectors and overall in terms of an integration of all of these, how do you fit all of the pieces of, all the ICT pieces together because as far as ICT is concerned, it's horizontal. It is not separated into these separate verticals of water, power and so on. And there are also the question of citizen services like property tax or some of the other kinds of building permissions and so on which the local authority approves.

So, for all of these, there needs to be a technology architects and from NASSCOM we have been working with the government and they had in fact sought our inputs in how this whole technology architecture should be done, Accenture has done a lot of work in that area. The second is how the safe city architecture should be done and how the special planning should be done, in geo-special part.

So, I think the critical question is how all these individual pieces are done, how could they be different and how the ICT will part of each of these pieces will be done and how they will interlock. So these are the issues which are now getting into the discussion

**B.V.R. Mohan Reddy, Vice Chairman, NASSCOM**

I think the definition part is nothing much could be same because it is very holistic, very ambitious. I'm honestly very sure there is a city that exist in the world that meets with all these criteria that they have defined it to be but if you can [indiscernible] I think certainly it will be a great achievement for any city for that matter. One of the thing that I think Mr. Chandrashekar pointed out to is that unless we get to the detail in is very difficult to understand what their ambitious goals are and equally important is that unless we get into the detail and start seeing the certain amount of standardization that would happen it would be very difficult for us to replicate it from one city to other, we will be start doing the same thing over and over again.

And the other thing that we have seen, my company especially assigned and has been very much involved in particular amount of [indiscernible] all around the world and we have seen that even within the city, the different departments though work in different directions, take example of power, telecom, water, sewer, cable everyone of them believe in terms of having their own [indiscernible] business. There are only few cities that we have seen the signing have come around to say that there will be one standard that will be there and one standard database that will work on. So therefore, I think what the government has to do is while it is a good, and great start in my opinion but moving forward they have to come down to say what is the whole architecture that is involved? What are the elements that are there? And how they will go ahead in implementing it. There was [indiscernible] detail that part still not, is very ambitious area when you have to have Smart Cities.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Let me come to the definition. I think globally there is a consensus today that Smart Cities are nothing but cities that are livable, sustainable and that gave the highest quality of life was citizen, that is simply put. It is very important that India draws from the global knowledge of-- some of the cities have gone ahead and made themselves get into the slot of Smart Cities. Recently Copenhagen received an award in Barcelona for connecting Copenhagen but you would think that it's a technology intensive project, it is not. It has just used a little bit of technology to convert Copenhagen into a green city.

I can give another example Stockholm, it is considered to be again a smart city with the origin of smart phones there but you know that people are minimalistic and maintain our green environment. Paris is also becoming smart but again categorically state that they are going to be a green city with less invasive technologies. I think globally it is a consensus that cities are going to be like this.

Now let's come to the Indian terrain. What is important to understand is the hundred Smart Cities that the Prime Minister has announced. There are three categories: the first category is about retrofitting the existing cities, the second category is redevelopment, the third one is Greenfield cities.

Now let's talk about the role of technology in retrofitting existing cities, there is a huge role for technologies there, for the simple reason that the design principles have been violated, the city is having flanged they have not been planned, you know the design principles have been violated. So we have no option but to resort technologies let's say for transportation where there is a modal split of 10% to 90%-90% being public transportation, you can predict a safe environment but there is so much in traffic regulations. So we need to go sensor [indiscernible] and geolocation devices, integration, city dashboards we need to do a lot. So technology has great role in retrofits. Technology has lesser role to play in let's say Greenfield development where a city can be planned, ground up using fantastic design principles. So I think India the way it moves forwards, I'm pretty much sure that when it comes to our existing cities like Mumbai, Hyderabad, Delhi where the technology players have to congregate and give wholesome solution to the city and not to compete but to collaborate like how they have been doing in other parts of the world and that's when I see a great traction for IT players to-- push our cities towards smartness.

**Avinash Vashistha, Chairman and Managing Director, Accenture India**

So I think smart city is again definition is very holistic but it's really about sustainability. There are competitive responsibilities where you have the reduced the negative impact of people and businesses that are happening to the environment but at the same time you to create an attractive economic and social environment for growth in which everyone in the government [indiscernible].

If you would look at some of the dimensions that we can probably look at from defining the Smart Cities and looking at what we can do, for example energy system, looking at renewable

and alternative fuels for examples. City planning it needs to be sustainable efficient and comfortable if you are designating work and shopping and living as a place, see what we can do to make it convenient for people to kind of go from one place to the other. Mobility - now the transportation needs to be done in an efficient public transport, emission free and multi-module. ICT- intercity very connected I mean when you are talking about connected cars, connected everything and it gives smart services.

In term of the demography education and health I guess we need to make sure that we have social equality and the growth needs to be inclusive growth. So I think the three places where we definitely need to specially like country like India the financial, the health and education inclusive of this.

### **R. Ray Wang, Principal Analyst & CEO, Constellation Research**

Yes, and I particularly add to it. We take a system's point of view looking at a futuristic model, we tend to look at [indiscernible] which is political, economic, societal technology environmental legislative view. On the political side, what we really needs to re-empower citizens and help them understand what that process is also empower legislative bodies and politicians to understand the impacts of these technologies and policies are going. The other piece is important as the economics of what are these new business models, what are these new business models are available and a lot of these comes to some of the conversations we talked about around digital transformation. Like what can we create unique class business model and what can we do to take any kind of transactional class to create more efficiencies, right? But we want power individuals to be successful just as much as similar larger corporates will be able to in to this digital model. And there needs to be a balance in that in the economy in order to be successful.

There we see societal dimension, that's also important and here we have been lot of collaborative economy, showing economies, we see some of those cool things in Berlin, we pick the car, anywhere drop it off, you don't get a ticket and then someone else picks up the next car, same thing with the bike sharing kind of programs. Those are important on the society level to people understanding what the impact is in terms of what that means life [indiscernible]. In some cases, people may still want to own instead of access and we have to keep the right balance in that city environment.

On the technology side, a lot of that has already been discussed here but a lot of it is really mean sensor and analytic eco-systems, being able to use this measurements. Today, we see companies like even no matter how despised [indiscernible] at the moment but even on ways and even just information on cell phone data is telling you about traffic patterns, in congestion, you can view the monitor those things to change how you deliver services.

Take cell phone data, matching satellite information, looking at GIS data I think actually change the way I look at [indiscernible] because I now know exactly the volume in the walk through and pass through. That also changes type of services I deliver and what prioritization of the

services whether there are emergency services, critical services or even just more lifestyle services that would occur.

At the environmental level, what we are looking for is the ability to actually create zero waste, zero land for manufacturing, the ability to take a sustainable technologies, something that we think might be sustainable, may not be right. I own an electric vehicle, I own twenty solar panels on my house but I can tell you the production to create those solar panels and the way we generate the coal fire electricity from my car really bad. So we have take these into the things just because it's fashionable, imagine you put a fuel of wind generated turbines, how many birds were we kill if its in the migration pattern.

So we have to be little bit sensitive to how that works and the last piece is legislative and here we actually have to change the regulation. The regulatory structure today is so prohibitive for renovation whereas there is to protect right and depending on what are you doing for an Indian [indiscernible] government has been there to protect some big business, to protect the individual and it is important but we also needs to empower the individual so that they can successful in the model as well.

**Rajeev Dubey, Managing Editor, Business Today**

So in some ways, very similar to what you said Smart Cities actually require a completely different mindset from the point of view of the government and from the point of view of the regulators as well. Several departments will have to be probably abolished or maybe crashed into one or two departments. And I think our government is either ready or they are certainly not ready but are they open to accepting this and are there any examples that we know of where cities and the government in different states have actually been far more receptive to the idea of going this way, of creating and modelling and remodelling their laws and bylaws reducing departments, are there any examples that we come across and do you think government of India is in any way, either government of India, state governments and or any cities where this is more likely than others.

**R. Ray Wang, Principal Analyst & CEO, Constellation Research**

I am going to take stab with this. Who is in charge? This is the charge you are fundamentally disrupting the power structure when this occur. When your power base is giving people away, giving services and giving goods away at the tax payer expense and that is your power base, it is almost next to impossible for that to happen. It requires a generational mindset, it requires a cultural mindset, it requires leadership to come back and say we need to make that shift.

I give you a great example I mean this is always an athma in U.S. politics. I actually believe flat tax may be more efficient because there is no more regulation but you know what we are going up against? Lobbyist to making a lot of money for regulatory, accountant to make a tonne of money to hit the regulatory pieces and bloods and consultants who are actually built around that structure and so you get a whole category of professional services job, you are eliminating

with the flat tax but would be free up the economy to do so much more if you got graduated tax as well but there is exceptions for everything and government loses its role and you can't do something like that but for this, this is potentially a [indiscernible] and this is where the education piece on the society side and on the political side has some opportunity to make that shift. So I think there is one probability here impossible, but as the old wattage, if you put a toll road when you do that in daily [indiscernible] never happens.

**Rajeev Dubey, Managing Editor, Business Today**

Yes, in Delhi, the Delhi-Noida Expressway has gone from 30 years to 70 years, you know one small spur that they have made and now it's going to be 70 years project.

**R. Chandrashekhar, President, NASSCOM**

But the toll has disappeared.

[Multiple Speakers]

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

We move to the challenges, now is that right?

**Rajeev Dubey, Managing Editor, Business Today**

But we are talking of whether the governments are ready or not?

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Yes, readiness.

**Avinash Vashistha, Chairman, Accenture India**

Similar to what we were saying was, the governments be ready in terms of providing the policy stuff is very-very important. At least in India for example the implementation of capital projects has been a significant issue. So policy is something that we find not just about India, I think this is across the globe. So there needs to be a very simplified policy statement so we need to be make sure that the investment that are coming in, find a very palatable environment. We have seen in the past, some of the emerging economies in India that there are certain policies which get retracted for example. So we need to make sure that there is a consistent policy, clear policy, simplified policy that we can predict.

The other thing is that I think we need to have different department because this is not something that one department can do, this requires different parts of the government who can able to do it. So I think they needs to be much more productive engagement between the

department, what are the common things that you normally find is that someone will come in [indiscernible] road for example and then the next day you will find the road being dug up, sometime for the quarter, sometime for the electricity and things like that. So that definitely needs to be much more productive about it.

The other thing is also, and the fact that this is not something that can be done just by the government. There really needs to be a truly collaboration and participation by all the stakeholders, citizens needs to be very much involved. I mean there are certain policies that we have in place for waste management and seriously speaking in the businesses and the citizens are like really want to comply with that stuff, want to really do this thing for the good of it. But just to be able to kind of, [indiscernible] look at basic things that you need to be able to do, those things are not in place. So, somewhere project cycle it is broken essentially. So not very difficult but it just that someone needs to kind of make sure that we call up it and simplify it.

### **Karuna Gopal, Founder, Foundation for Futuristic Cities**

Yes, I think the first challenge that everybody is talking about is the silos, the departmental silos and I think to circumvent -- we've had several, let's say processes that we have adopted at one time and the legally certain things are not possible then we come up with parastatals and we started working on SPVs -- there is a way to work around the system because our laws are pretty much Jurassic as most people described them so we can't really -- if we can't really work, we have to learn to work around the loss. So I think the departmental silos perhaps the way to overcome the difficulties that Triple Helix that he was talking about -- the Public Private People partnership where I think the corporates and the governments along with certain prominent citizens can actually start working towards the bettering the cities.

For instance in Hong Kong we have seen several stakeholders started working including housewives, New York how they rebuild after September 11 attack, so many corporates came forward, started working with the Bloomberg. I think this formula of building an excess between the private sector and you know the government along with citizens will really work wonders. In fact, we have seen few incidents like Bangalore Forward was an example at one time, Nandan Nill Kenny used to work with everybody.

Bangalore set out precedent and Delhi also had something called Delhi First and now Bombay again, few days ago had a meeting again - Bombay Next. I think these groups that [indiscernible] for a city can articulate common goals and work around the system and maybe nudge the government towards delivery. I think this fundamentally should be the way forward. The rollout for the Smart Cities,

Of course there are other challenges in the PPPs and investments and innovative models and because with that I think we will talk later public-private partnerships is perhaps the way that government wants to go into the game but again we are at the bottom most rank of PPPs maturity in the world.

**Rajeev Dubey, Managing Editor, Business Today**

So, when we were trying to figure out what all the involved, we figured that there are going to be 14 ministries and sub ministries within those who have to think alike and you know where two ministries and two ministers can't come together to agree, is a hell of a task. So you are right.

[Multiple Speakers]

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

We need to work innovatively right. We should just be bold and cut across like cutting across how do they cut across party lines and bring some ordinance to play. So it has to be cut across with certain ministries.

**B.V.R. Mohan Reddy, Vice Chairman, NASSCOM**

So I think there is other way -- around the way looking at it is that [indiscernible] there should be more amount of coordination and possibly they need to in an authority in place which does the coordination between the various departments and it takes the ownership thereafter to say that that particular authority will be responsible for delivering the Smart Cities and that's the way in which you can cut across. That authority could then thereafter make sure that the replication may not be there, standardisation would happen and so and so forth that's the one challenge they are having.

The second one is without society there is no way any of these initiative become successful and that way the society which has to work with the government, the government has to recognize that the society too has a responsibility in making sure that we have a liveable world. What is happening with these initiatives that we have talked about whether its Bangalore in the past. They have asked that the government did not give the many support there is a Bangalore Way Forward, some of initiatives that of with full money that money is finished after that there is nothing else that can be done.

So therefore the government has to definitely move forward to say that we recognize the social role and the society has to be [indiscernible].

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Institutionalize in some way.

**B.V.R. Mohan Reddy, Vice Chairman, NASSCOM**

Institutionalize, absolutely yes.

## **R. Ray Wang, Principal Analyst & CEO, Constellation Research**

We need [indiscernible] visionary technical. That's what the missing part and you need more of them.

## **R. Chandrashekhar, President, NASSCOM**

Much as we may [indiscernible] governments ad silos structure and so on as the Mr. Chidambaram has one remarked 'this government is terrible but when we invent an alternative what we have to agree with that - we have deal it with what we have got. But having said that I think this is not [indiscernible] I think there is a lot of which can be done and it is being done but in pockets and I think we need to look at what is working practically.

So if you look at may be some of these areas, I think in a municipality it's a third tier of government, under the constitution it's a tier where all of these different departments are coordinated at that localized levels. So with the departmental coordination at that level is done within the municipality but let me come to a slightly different point to put across two points, number one that there is a certain change in mindset that is required and the number two illustrate that with an example rather than trying to give some theoretical [indiscernible].

One of the requirements of the smart city is that all of the services should be digitized and there should be ICT placed management of each of the areas that we have talked about what is all this based on. Based on the telecom infrastructure, you need to have fast, reliable, telecom infrastructure. Today we all know that while we may talk about the broadband revolution in rural India, it's a hard to get reliable broadband connectivity of 100 mbps in city. When in place like Delhi or Mumbai it might difficult some times. So the question is how do you solve that kind of problem in smart city because in the sense the foundation of better place.

So one creative way for city is today what we have and what might, what could have. So today what we have is, let's say okay we want optical fiber to come and let the private sector come in and for every kilometer 4 lacks is charge of payment and then you just go ahead and implement and everything is fine. What's the problem with that? problem is that first of all if each one comes and pays 4 lacks, the infrastructure is not viable from day one, the second is today somebody will dig the road and then you will have one guy laying the cable then they will close it and then the next guy will come in, it will be a total mess financially and physically and it will be an ecological disaster but if a same municipality were to look at it in a smart way and say look I am not going to look at this as a how do you I get upfront revenue and I am going to wait for my revenue, this is a foundational work, I don't have too much of money and that's by and large true for the most of the municipalities but what can be done is to say that okay for laying this infrastructure I am going to participate in this project in terms of providing the right of play as my contribution to the income of government as my contribution and set up a suitable body, you call it as SPV or whatever which then plays out the optical fiber as a single shared resourced up to the curve where the final last line services are provided by individual operators.

**Rajeev Dubey, Managing Editor, Business Today**

As a plug and play infrastructure.

**R. Chandrashekhar, President, NASSCOM**

As a plug and play infrastructure, this infrastructure is well recognized. This infrastructure is well recognized in urban area it is perfectly viable and that can pay for itself. So it doesn't need a single rupee of investment by the government or even by the municipality, private sector investment can - what do you need as a structure and what do you need as an organization which can have this kind of conferences. But most important of all it requires a change in the mindset where people A: they don't want to control, it on a daily basis and B: they don't want to look at this as how do I get my revenue and let's forget about what happens thereafter. So this analogy can be applied in somewhat differing ways. I am not trying to suggest that you can do it exactly this way for water or power because there are other issues of keeping it affordable and so on. But essentially if the private sector role is looked at in a partnership model as oppose to just being a render or somebody who just comes in then I think many of these things are possible and especially in the ICT and the smart city part, this is fundamental and basic to the whole person.

**Rajeev Dubey, Managing Editor, Business Today**

Now coming to the issue of financing Smart Cities, government obviously is not going to able to fund the whole thing by itself so what are the most viable, applicable models that are emerging anywhere in the world which you think we must look at very-very closely in terms of it because I think our financial model as far as government's point is concerned is still do evolve, they haven't even got around to discussing it, I mean the concept paper is the first step in this directions so what is that you must look at in terms of financial models?

[Multiple Speakers]

**R. Chandrashekhar, President, NASSCOM**

Just to take a stab at this one, you see the finance ultimately how you are going to finance this - it's really the elephant in the room. Now for Smart Cities, the stated targets are 100 Smart Cities and that that is per units 7,000 crores and to put this perspective 70 crores is the cost of one plot of land in Vasant Vihar where I...

Karuna Gopal, Founder, Foundation for Futuristic Cities

Can I interject here. That 7,000 crores was categorically announced as for at least writing that DPRs. Only for the DPRs.

**R. Chandrashekhar, President, NASSCOM**

What I am saying is that even if you say that for writing the DPRs, the question is that if you extrapolate that if a DPR cost is 7,000 crores how much is the project cost. Typically, a hundred times of that. So where is that money going to come from, that's still an issue. The point I am making is not directly about 7,000 crores but the fact all of these money is not going to come from the government. So how do you [indiscernible], now the government doesn't that money, the municipality doesn't have the money they have all this ambitious plans, where exactly the money is going to come from and you have to create an engine which is able to propel itself that's the whole point.

That was one liver and I would really hesitate to say that because it is being subject to so much of abuse and scandal but yes it remains the principle liver which is the FSI in the city.

[Multiple Speakers]

The value is proportionate to the FSI that is provided. Again, I illustrate this with an example. When Mr. Chandrababu Naidu was the chief minister they were looking at how do you widen roads? The novel method till that point in time was you decide how much you have to bind it, acquire the land, everyone will registered to that [indiscernible] and half of them will succeed in getting the stay and the whole thing will end up in courts, some parts will be done, some parts will not be done, it will be a mess. This is the amount of land we need, you are given extra FSI to built above that so people demolish that building, went vertical, every street started looking like a brand new building. You see that difference when you go other cities.

**Rajeev Dubey, Managing Editor, Business Today**

This was implemented in Hyderabad.

**R. Chandrashekhar, President, NASSCOM**

[indiscernible] Hyderabad. I have seen a few cities where the same thing has been done because of obviously everyone is watching each other so if you are picked up [indiscernible]. The point is what do we have learned from that and what can we apply out of that to the whole smart city program and then the point is that can you create an [indiscernible] where you are willing to provide this extra FSI and people have to pay for it and they have confidence that that money is being used to build high quality and high capacity infrastructure which we serviced that particular area.

Today the problem is that not only road has [indiscernible] but even if you, some of you had the money, people don't have the confidence that you will deliver because you collect money for something and that it will given for something else. So I think this kind of a model is required because that pulls in people's money, this is also people's participation at the end of the day but you have to get people to participate voluntarily. They shouldn't be dragged, taking and

screaming into the smart city project. So there are many innovative ways like this, these admittedly do require legislative [indiscernible] you cannot do any of the things that have government without legislation. All of these have been controlled by legislation and getting any changed legislation is a tricky in a politically charged environment and in one where the public trust is low its even harder because then everybody feels if I give them the power to change the FSI and sure as hell it is going to be used for the long for section. So I think those are the things that you need to address.

**B.V.R. Mohan Reddy, Chairman, NASSCOM**

It could be best reminds with which the Smart Cities are being built at this time, the primary reason is that if you want to make living much better for [indiscernible]. So obviously if you are asking something better you are going to pay for it, I think that's the best remise I believe and there is nothing like some real case for it, money does not grow trees so therefore they have to raise it from that. [indiscernible] had some good ideas of innovation but I think one time is [indiscernible] stuff what we have seen is the build operate transport model that private sector can participate to come and build this stuff I am sure they are ways and means by which the money can be raised but transfer it back to the government over a period of time but there challenges could be one has to be very pragmatic because in the past I think in India we have seen a number of BOT projects being done in infrastructure, especially the roads and we have seen what's the outcome of those. So therefore I think so long as we have some lessons learned and those are definitely may taken care of. I believe that the build operate transfer model is one way by which we can make the cities much smarter.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

I don't know I think financing is-I think lot of discussion is going on and people are exploring opportunities. Money still burns if something - I don't think India can ever experimental that given the---

**Rajeev Dubey, Managing Editor, Business Today**

I think some municipalities in India have also gone through it.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Yes, the creating help [indiscernible] last five years but I think the trust deficit is still there. So those things won't work and I think in PPPs we still don't have a good framework of risk sharing and let's say keeping certain structures. I have seen some PPP projects in nations like Brazil where they actually worked on and still kept it little heuristic and reduced the risk for the private players but somehow I think India has to get to that level of maturity. So investments, private players are staying out of utilities for instance why do they stay out of that, those categorically there has willingness to pay user fee like we are still reticent we are not even in a position to charge. So the funding could be a problem but I have some small - I have seen some

pockets of innovations in terms of funding. Like today we are even talking about pay as you use and so I think in retrofits when IT companies start working I think using cloud infrastructure you can optimize a lot of investments I think that is one.

There is one small example I don't know how relevant it is to India but I had seen the brewery blocks redevelopment project in Portland there is a \$300 million project where they took one brown field area and made it completely green field in U.S. the cost was \$300 million, the city put 12 million and the private players aggregated their whatever contributions and it came to the rest, so the 300 million was raised and they redeveloped the entire block, now it won an award recently so my renewed interest in that. The people started paying higher tax so the city gained because the public tax has enhanced then the private developers could lease the properties, could sale the properties and they made money through various channels and I think I was told that both parties are very happy. So the ratio is 1:36, the contribution of the city was just 1 and the private players were 36 which is a successful model there but in India we need to also start looking without saying that things will not work here. I think we should start exploring these pay as you use and today they say cities on clouds, so obviously you satisfy all those things will come into this area but though I am not a technology person I am sure things will move in that direction and they will be new innovate financing models coming out.

**R. Chandrashekhar, President, NASSCOM**

Included the cities in cloud but not in the idea remains in the cloud.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

There are good chances of that.

**Avinash Vashistha, Chairman, Accenture India**

Now again, I think we have talked about financing in the few things. If I was to look at and I am sure a lot of thought has gone into financing projects like this in capital project. Infrastructure we talk about in our plans about a trillion dollars that will be required over the next five years period, half of it is going to come in from outside of country and half a trillion is going to be finance between the government and the private parties, and obviously all the models that we have talked about that will be there, so that definitely will apply to the smart city as well.

For example in terms of how do we mobilize these program, one of the examples like we have in Singapore, you know Singapore government has a program called REACH- reaching everyone for active citizenry the whole idea is to increase the participation of the citizen in policy making and now also they use SMSs, emails, social media and so that they can facilitate the formation of world groups who work together and develop ideas then put into proposals and then they submit it to the government and I think that's the great model of how you immobilize the world groups to be able to do that stuff.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Funding is it, are you also talking, to just the crowd funding?

**Rajeev Dubey, Managing Editor, Business Today**

Yes, or is it crowd funding you are saying?

[Multiple Speakers]

**Rajeev Dubey, Managing Editor, Business Today**

This is right now the idea and proposals stuff really.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

We have done, my foundation has done it in 2007. We sourced - crowd sourced solutions for a livable city. We had 100 organizations participating and now today we have a corpus of knowledge that is can be borrowed by any city, in fact they have taken a smart parking solution has been taken by seven cities, car pulling has been taken by 11 cities, so that has generated in 2007. In fact in Washington DC, they said that they have followed that much later than we did in Hyderabad. So this establishes the spirit of people they would love to participate but we don't have any mechanisms to ensure their participation but funding also could be a possibility. Sometimes you can offset some of the expenditure by ensuring people do it for instance in Golconda Fort was cleaned by 5,000 people back in 2009 by volunteers raised from using just Facebook.

**R. Ray Wang, Principal Analyst & CEO, Constellation Research**

Yes one of the things I was saying is in government projects, a lot of this is getting open sourced, open data available right and building business model from open source data that's out there, sometimes some projects may be people just won't initially but it's not necessary just money but recognition or access or the ability to influence an outcome that's the source what's happens in the social networks but I think we need to get more creative of that business model for example in transportation systems right to open up a lane or widen up transit or to create a mass transit or livable or sharable kind of transit I mean you see what's happening in cities with advertisements on bikes, right. The model was just shifted because they were finding different ways to create new business model. The beauty of development of infrastructure is you are improving real estate and when you improve real estate you will change the rental model, you change the advertising models, you change the access models. So I think people need to be accretive by what those business models will look like.

Another great example as you are talking about parking systems, I mean there is a technology in the U.S from a company called Street Line Systems and what is Street Line is doing is they are

putting sensors on parking spot, it does a couple of things, improve revenue collection because you know exactly when people left the space, you know exactly who hasn't paid and one has paid, you can also pay by mobile device and by doing that you just improve revenue collection.

The second thing you have done is we now have an idea of exactly what the traffic circulation looks like. And by knowing the traffic circulations, you can also change the way you do routing, to improve routes add more mass transit lines as you need, change directions may be go one way down to the certain street, it came to the way to city planning and with that data and that insight but that also gives me data on traffic which actually helps with add revenue and also in terms of generating rents. So pretty soon you are in the insights in brokering business which is actually a very valuable business. So there is multiple ways to finance this but not necessarily with the municipal bonds, not necessarily with the outsourcing. We can think about new business models that involve back to the PPP architecture. Now, the challenge back to the PPP issues the fact that trust and transparency and policy is the issue and so the people need to see where that process is going and to see how it's being influenced in order to gain that confidence.

So you need to have that balance in place if you are going to create new business models because people will start fear mongering that the business is going to take over these IT companies are going to take over these, models...

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

I think certain expectations. I think there is a fundamental thing, my city is dappling with the new metro rail. The first thing I told them is to ensure that people have to be told that it's a good infrastructure that's coming its not messing with our roads to began with because the public transportation shrinks the city, we are the big urban sprung and it's only public transportation that actually shrinks the city.

**Rajeev Dubey, Managing Editor, Business Today**

Some of the green field city experiments and the closes that we can come to our for instance is Lavasa and you can call it that was a city for holiday and all but still some of these experiments don't seem to have worked and it still continues to remain ghost town most of the week, except for the weekends when people tend to. So do you think that this could be trying to force fit or trying to bring in people industry's infrastructure into a green field city? Do you think this experiment...

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

They had the first mover disadvantage.

**Rajeev Dubey, Managing Editor, Business Today**

Yes.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

They moved too fast. India is not ready. We have to understand it.

**Rajeev Dubey, Managing Editor, Business Today**

You are saying that green field is not a good option rather than we should do green field or...

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

No, green field is a good option, it is a good option. It's just that everything has to be conceived well. You move a little fast like even in our technology space, you came out with the product and people didn't understand what the product was but it was a marquee products. So that's what happens. I think in India Lavasa was very well conceived but it did have its own issues, it was like too much away from what India was ready to take at that point in time. So now green fields are useful provided we plan them well and don't make them go above board like I mean they - I don't know for some strange reason people are thinking of let's say flying cars and we don't need all that, you know what we need is predictable lifestyle so a good amount of good urban planning, sensible planning with minimum invasive technologies that's going to work wonder and I am 100% sure much as I love technology I know that we can, to begin with we need to prevent then when you cannot help any city that is busting and it seems that they are bringing technologies to ensure that everything becomes predictable through may be big data analytics or whatever you say, use just everything that we have in our hands.

**R. Ray Wang, Principal Analyst & CEO, Constellation Research**

I think that's the first generation of smart city. We have the utopian field that people tried for 1,000 of years. But I think what you will with each generation the smart city is the fact that people subscribe to certain lifestyle and their lifestyles is a set of values that they want that city to be and you are going to see different types of cities emerged.

To force fit policy on top of that type of lifestyle is probably not the best way to do that but to provide a set of common infrastructures which allow people to live to the values that they are interested in well. So Lavasa is a great example of that work, the values that was just -- it was really a vacation. So I mean what else we are going to do during the week, there is nothing going on. So that's the programming issue. So are there any jobs nearby? No. Right.

**Rajeev Dubey, Managing Editor, Business Today**

There are colleges now.

**R. Ray Wang, Principal Analyst & CEO, Constellation Research**

You have colleges now. Right so I think the programming and the mission of that value is very different. So this was something we talked a lot which is brand authenticity the city has type of set up, what is the spirit of that city suppose to be about?

**Rajeev Dubey, Managing Editor, Business Today**

Let me come to another example which is outside Gandhi Nagar. What detractors call it a forced city into Ahmadabad or into Gujarat just because the Chief Minister at that time Narendra Modi wanted something over there. How do you see that going? Because that's again looks like and then there are those DMRC - along the DMRC corridors that they are planning, [indiscernible] so how do you see them those cities going, especially we have - gift has moved a certain number.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

It achieved financial closure.

**Rajeev Dubey, Managing Editor, Business Today**

It has but there are not enough financial companies there. So there is not enough business there, there is not enough people there and there is not enough companies there. So how do you see I mean this whole thing of trying to force and create a completely new city although in Naya Raypur I believe there is an experiment where the government and at least government institutions and part of the government has managed to move in there and then it seems to be working Chandigarh many years ago but the new ones?

**Avinash Vashistha, Chairman, Accenture India**

Into your list again, you have this Ajmer, Allahabad so these cities are being just recently being inherited. I think just talking about Lavasa and some of the things, these cities are series where people are there, businesses are there and I think trying to basically bring in a certain enablement of the elements of Smart Cities in these spaces probably may work better. So I guess in good fact that may be difficult to kind of kick start and develop green field but overlying some of the principals of Smart Cities and series like this may be doable.

**R. Ray Wang, Principal Analyst & CEO, Constellation Research**

My American thing is coming out. Soviet styled planned economy are [indiscernible].

[Multiple Speakers]

## **R. Chandrashekhar, President, NASSCOM**

And also for a very good reason and [indiscernible] exactly but I think Ray might have an important point. You can't expect a degree of homogeneity in these cities, it doesn't exist in our society. It doesn't exist in different parts of the same city, forget about different cities. But I think the question then is that you know what can we do so that this whole smart city as a program can move faster, I mean one extreme is to stay that you force fit one model and they can make it everywhere it's a disaster but other extreme also has it's own problem which is to say that well everybody has their own cultures so let's wait for their culture to lead the top. Then also you are not going to get, so I think there has to be some elements of common paradigm to drive this whole program which leave enough room for the local variations. These could be very fundamental even the banner in which it is funded for example if you look at the Naya Raypur I think it was mentioned as an example, gift as another example, if the state has the money and they are willing to put it in, put out it or fund the entire infrastructure get that done and then let the rest of it develop through a business model or remove the capital as they have done in Naya Raypur or as in Andhra you are building a new capital so here as a great opportunity to have green field thinking because you have a green field opportunity so there are many different place but some of the elements are common because the degree of plays that you have, degree of pay down are very simple either you use the FSI or you use government money or you use private money and if you take something like gift even if at one level you argue that it's a successful because at least they have got the job done and it was done in a very modern way but it took too long.

The whole process and I am not talking about the execution which may have been quickly but you know the whole process of arriving at a model, how it will be funded, it was tortuous. You surely do not want to do that 100% independent.

## **Karuna Gopal, Founder, Foundation for Futuristic Cities**

In fact I think what's very important to know is that timing of India's decision to go for Smart Cities. If you have get a perspective, I think India decided to enter the smart city game when - where it can draw from the global knowledge that is already available like 10 years ago let's say Barcelona, Rio all of them have been adopted I might say from by companies like Cisco and IBMs and several other cities also started investing quite a bit in the smart projects. So there is a lot of learning, global learning that is available for India.

I will give a simple example, technologies are matured, technology cost have come down, vendors at one time started competing they were competing back then offering same kind of services. Bloomberg I know in his office we were hosted, they said that ma'am we get confused by the kind of proposals they get. Imagine Bloomberg's office saying that now today there is no such confusion because I think most of the technology players have understood to collaborate and give a wholesome solution to the city, so India has embarked on the journey and the

market out there matured and India can use it - it's like R&D laboratory the world has turned into it and India can draw from that.

So I am very optimistic that we do have some readymade solutions but the key to rolling out is how we get our act together in terms of our own consolidation at the government level, the institutional frameworks the rollout plans and how innovative we are in drawing the funds and keeping citizens engaged because I am telling citizens can either make it or break it. So on a gift - why we are talking about a gift like this. For me, right now we have said it's a great deal because okay some lying somewhere but for someone like me I think it's inspirational, it's good 2007 it was conceived and not many were talking about it. So I think to hold the expectations of citizens and to engage them into this game, I know that data stores at London is talking about and Marathon, , Hackathons Devathons that we are doing on a regular basis. I think they will keep the traction getting better and better.

### **R. Ray Wang, Principal Analyst & CEO, Constellation Research**

I think on the common chords, it's really important to drag on the basic sort of things, like whether it's water, whether it's telecom, whether it's utilities whether it's just the ability to collect on taxation anything at a basic level you have talked about the foundational elements, that's basically is right on the cost of being an [indiscernible] drive on the cost of being innovate, right on the cost to being able to live, the government has inherent duty to deliver the service at the lowest possible cost, the lowest possible amount of regulation and if you truly believe in government and your job is to do that so that you can deliver it and give an access to many people as you can. And that as a basis as a core and then what you want to do with it, you want to be the sport city, it will going to be the sport city, you want to go the college town and want to be a retirement village, it could be retirement village but here is the basic infrastructure, retrofit it, ground field, green field it, it is now available, it is a common template and the rest is up to your citizens to engage in that design process.

[Multiple Speakers]

### **R. Chandrashekhar, President, NASSCOM**

And if you want to have it at the lowest cost for that particular quality of that infrastructure its going to be the most efficient and you can get to the most efficient only if you use ICT. In today's world it's only possible [indiscernible] there is no other way to achieve that, that kind of efficiency. That's why all of these really ultimately comes together.

### **B.V.R. Mohan Reddy, Chairman, NASSCOM**

[indiscernible] the destruction that you see with the technology at this point of time, certainly enables people to lower the cost of having efficiency in this world. So if you look internet of things that have come by, the way we take and get connected or the way in the cloud solutions that are there. Or the way in which you are optimizing things based in the [indiscernible] that's

coming in. So therefore I think the right way to move forward is technology is one way for sure that will ensure that you will have for [indiscernible].

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

And also the human talent, right, that way India has called. In Hyderabad did you know that we have a user-group for [indiscernible] 2,500 people, that's the largest in the world and my team mentors them.

**R. Chandrashekhar, President, NASSCOM**

Lower the cost of achieving efficacy, don't lower the aspiration.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Yes, I mean it should be aspirational. We should have the biggest to fames and things will fall into place. Okay there will be some mess here and there, fine.

**Rajeev Dubey, Managing Editor, Business Today**

Before we close one bet from each one of you which will be India's first smart city.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Any money?

**R. Ray Wang, Principal Analyst & CEO, Constellation Research**

You [indiscernible] on this.

[Multiple Speakers]

**B.V.R. Mohan Reddy, Vice Chairman, NASSCOM**

New capital, Chandrabau Naidu's [indiscernible]

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Or I would say...

**B.V.R. Mohan Reddy, Vice Chairman, NASSCOM**

[indiscernible] that's the green field project so he has an advantage.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

I would even say Vizag.

**R. Chandrashekhar, President, NASSCOM**

No prices for guessing from which state there.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

It could be the new capital or even Vizag. The same Andhra Pradesh.

[Multiple Speakers]

Avinash

I think that's the good one.

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

Yes, something from Andhra Pradesh.

**Rajeev Dubey, Managing Editor, Business Today**

Not Dulhera, not GIFT.

Avinash

I think it is a very significant center point. The city has to really come up. Absolutely and this is not about the fact that the certification spot or gift stuff. I mean it is something that so...

[Multiple Speakers]

**Karuna Gopal, Founder, Foundation for Futuristic Cities**

I think the differentiator is the leadership.

**R. Chandrashekhar, President, NASSCOM**

If I make a guess, my origins would also be revealed here. I think it is ultimately -- it is emotion that is not in logic.

**Rajeev Dubey, Managing Editor, Business Today**

Thank you so much for your time.

<http://businesstoday.intoday.in/story/government-decides-to-build-100-smart-cities/1/216820.html>