

Remixing Cities:

Strategy for the City 2.0

Cities innovate when people mix and mingle, sharing and combining ideas from different vantage points and traditions. That mixing takes place on and in shared infrastructures and spaces that bring people together.

Charles Leadbeater for

CEOs for Cities

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Our tour and this report would not have been possible without the cooperation and widely diverse experiences of all with whom we met.

It is our hope that one day very soon we will have many robust examples of Remixed Cities at work from which we can all learn. They will be one more key piece of evidence of the devolution of centralized power to the edges and the rising influence of cities and their citizens.

- 2 The bind
- 6 From excellent schools to a platform for learning
- 8 The three circles
- 11 City challenges: clocks and clouds
- 14 Getting into the cloud
- 16 The social web approach
- 19 The learning platform
- 25 To do and not to do
- 28 Remixing the city

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The bind

City leaders are in a bind.

Civic leadership has to deliver better schools, efficient transport and a quality of life that will develop and attract talent to feed a thriving business sector and social innovation.

Yet cities' problems do not get any easier. Many cities are still struggling to raise educational attainment, reduce welfare dependency, regenerate hollowed out neighborhoods and make cities safe and secure years after first addressing these issues. Complex challenges are emerging that defy easy solutions, from climate change to caring for a growing elderly population.

And it is all too easy to get things wrong. Cities are poised between the dangers of rapid growth—which stretch the social fabric, pump up property prices and threaten to overrun older infrastructures for transport and business—and a cycle of decline in which people, businesses and jobs leave, setting off a downward spiral of economic and social disinvestment.

City problems are more intractable because the institutions we depend on to provide solutions are less effective. Schools, health, welfare and transport systems were designed for a more stable and predictable era.

So city leaders invest huge efforts to adapt school systems to the demands of a modern service and innovation economy; modernize welfare to promote employability; refashion social services to cope with the rise in the elderly; and make health care responsive to changing patient needs.

These older institutions are deeply entrenched, resistant to reform, closed to new entrants, slow to embrace innovation. Change takes more effort for limited impact.

The institutions become the focus of attention instead of the outcomes citizens want. The debate is about schools and teachers' contracts, not about learning in families, communities and workplaces; access to hospitals and paying doctors, not promoting public health and well-being.

People judge a city by how it feels, and that depends on whether it is clean, safe, tolerant, healthy and well educated with a good quality of life for families and the elderly and a solid base for a thriving business sector.

That feeling cannot be delivered by better services alone. Complex public goods—like a clean and safe environment—have to be created from within cities, through collaborative innovation involving many contributors, the public, private and nonprofit sectors, as well as families and citizens.

Mayors can deliver better quality of life only by stimulating and orchestrating this collective innovation within their cities. They can neither instruct nor control it.

But civic leaders can make a unique contribution by changing the way a city frames its challenges and mobilizes public, private and voluntary resources to meet them. That job—framing the process of collaborative innovation— involves three ingredients:

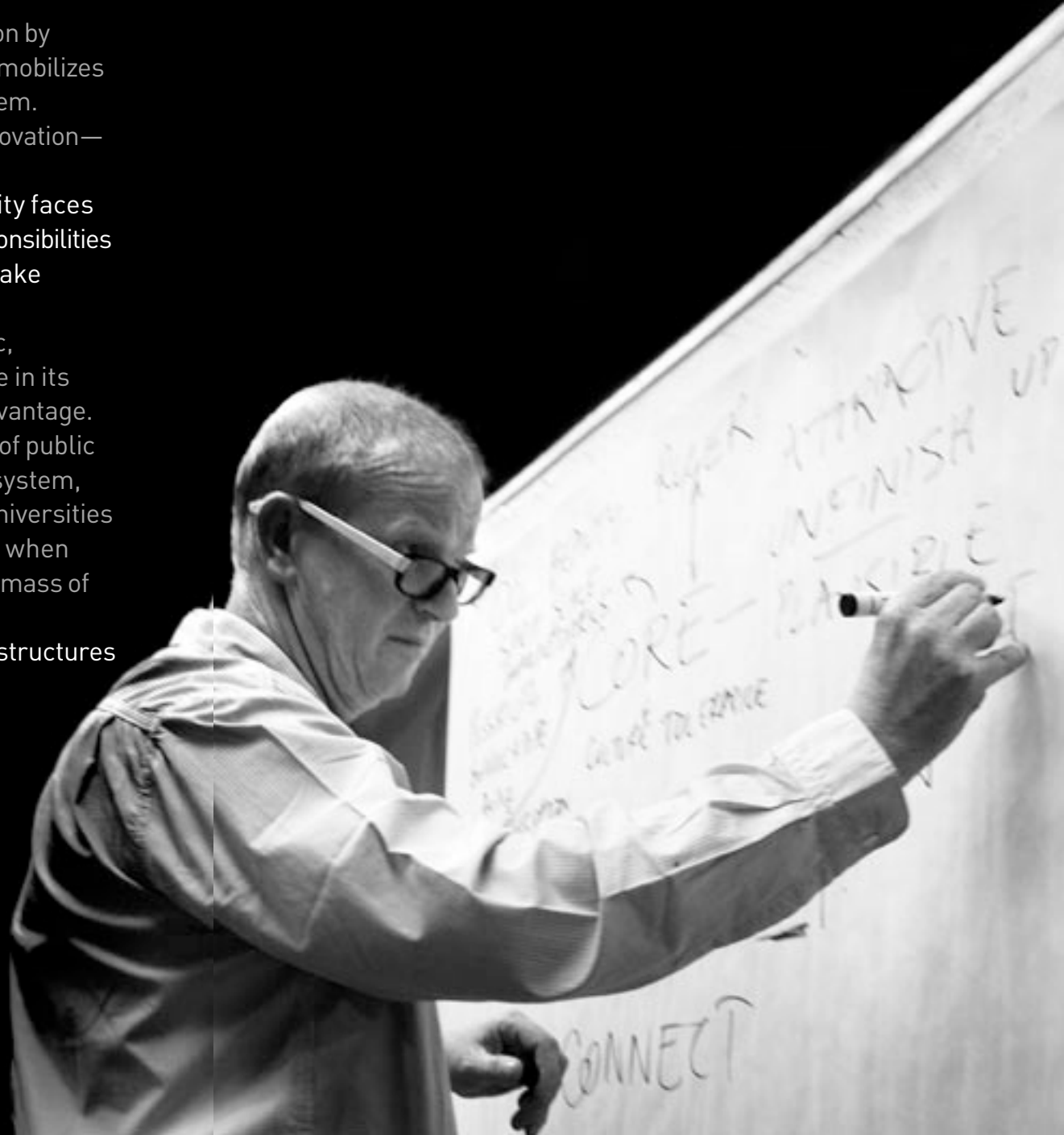
- o diagnosing the challenges and opportunities a city faces
- o agreeing with different players on their shared responsibilities
- o motivating and sometimes equipping people to take action together

A city that develops a new recipe for systemic, collaborative innovation will create a step change in its quality of life that will be vital to its competitive advantage.

Great cities have always been at the forefront of public and private innovation. City maps and the postal system, sewerage and sanitation, schools and libraries, universities and hospitals, all began life in cities. Cities work when they create shared infrastructures that support a mass of private and social innovation.

What we need in our era are new, shared infrastructures to meet the new, shared challenges cities face.

Take education and schooling as an example.



From excellent schools to a platform for learning

Schools are central to education. They need to do a much better job—not just of consistently delivering higher standards for all pupils through better teaching. Schools are out of kilter with the way children will work and live in future.

In a world in which everything seems to be 24-7 and on demand, schools operate with rigid years, grades, terms and timetables. That might have made sense when most people worked at the same time, in the same place, on the same tasks, their lives organized by the factory siren. But people increasingly work at different times, in different places, often on the move.

Yet it's not enough for schools to be open for longer, more flexible hours. **Schools are factories for learning in an economy in which services, software and innovation will be the future.** Traditional schools do too little to encourage individual initiative and collaborative problem solving. They cut off learning from real world experiences; they focus on cognitive skills at the expense of the soft skills of sociability and mutual respect. A city that wants to attract and retain families has to have good schools that meet these challenges.

Education does not start at school. Some children are more ready to learn at school because their families prepare them and reinforce at home what they learn in the classroom. Families are as important to education as school. An integrated education policy would focus on how schools interact with families including learning supports at home, extending the school to allow children and parents to learn together, and raising family aspirations for learning.

Children spend 85 percent of their waking hours outside school. Increasingly they learn from the games they play on computers, from television and from their friends and peers. They organize their lives through their cell phones and social networks. We have an analog education system for a digital world.

And in any city there are vast resources for learning outside schools: in workplaces, shops, offices, galleries, libraries and theme parks. Children learn in classrooms but also—often more so—while they are working and playing. Large companies are increasingly remodelling themselves as open innovators—drawing on the knowledge of their customers, suppliers and partners. Schools need to do the same. The entire city could be a classroom for real-world learning.

An integrated city learning strategy would link schools and families more closely, supported by a “platform” for learning, both digital and physical, distributed across the city.

These are like three interconnected circles.

The three circles

These circles are like an egg on a plate.

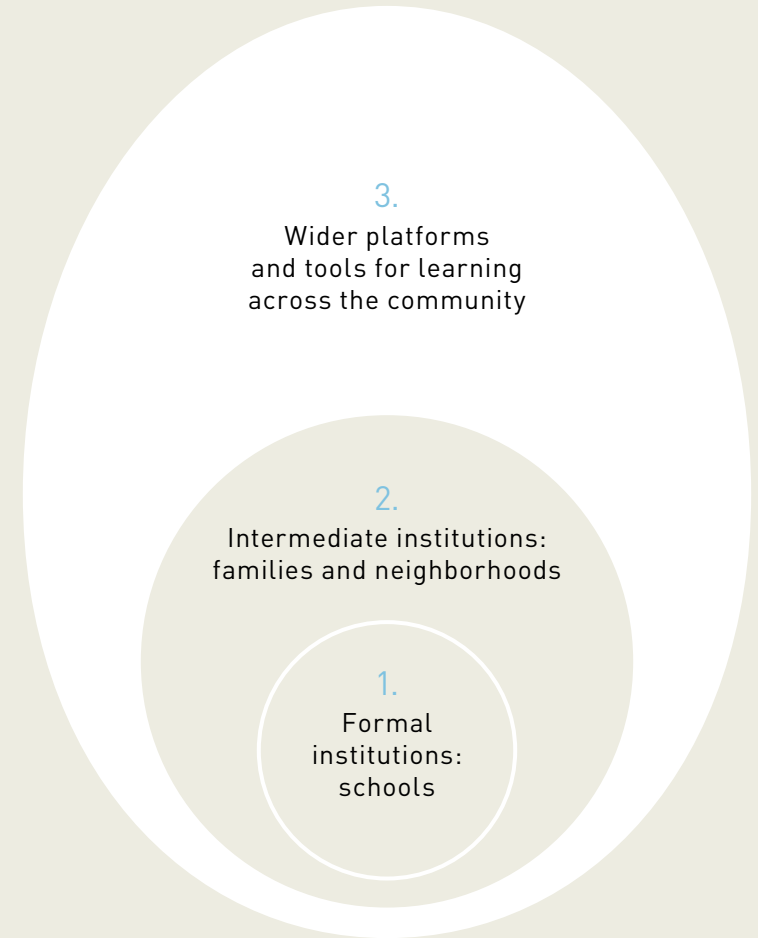
1. In the yolk are institutions of formal learning: schools and colleges.
2. In the white are intermediate services to link families to learning.
3. The plate, on which the egg sits, is the wider learning platform that links the resources for learning, both digital and physical, distributed across a city.

The challenge for a “learning city” is to connect all three circles—to put the egg on the plate.

Most cities are reforming schools with stand-alone strategies. A few have strategies that embrace families and schools. Leading cities in the 21st century will have fully integrated strategies across all three circles: schools, families and the wider community platform.

The same basic recipe will also apply to health, sustainability, mobility, safety and care:

- o reforming core institutions and services
- o supporting households to change behavior
- o providing a platform to connect them together



It is not an entirely new recipe.

In the 19th century before the advent of sewers and water pipes, only the rich could afford regular baths. Most city dwellers went to communal bathhouses. The combination of regular water supply and the simple bar of soap changed social habits dramatically. A shared platform—water and sewers—allowed a mass of bottom up innovation as houses acquired indoor toilets and bathrooms. Now we can buy a vast array of products to make us clean.

What we have to imagine is schools, hospitals, recycling centers and police services not as the solution but as central to a platform on which people can devise more of their own solutions for learning, health, mobility, safety and sustainability.

The Three Circles approach creates a way to improve outcomes—learning, health, care, safety and sustainability—not just to reform institutions.

City challenges: clocks and clouds

That matters because cities face two quite different kinds of problems: clock problems and cloud problems.

Some city problems are like mending a broken clock. They are complicated, with many interlocking parts that require technical expertise to solve. For cities “clock” problems include improving the quality of math teaching in a school system, collecting more trash for recycling, ensuring police respond in a timely manner to emergency calls or planning physical regeneration.

Yet many of the problems cities face resemble clouds. They are diffuse and escape attempts to pin them down. “Cloud” problems include making a neighborhood feel safe, encouraging teenage boys to want to learn, reducing a city’s carbon footprint, or creating a buzz in a newly regenerated area.

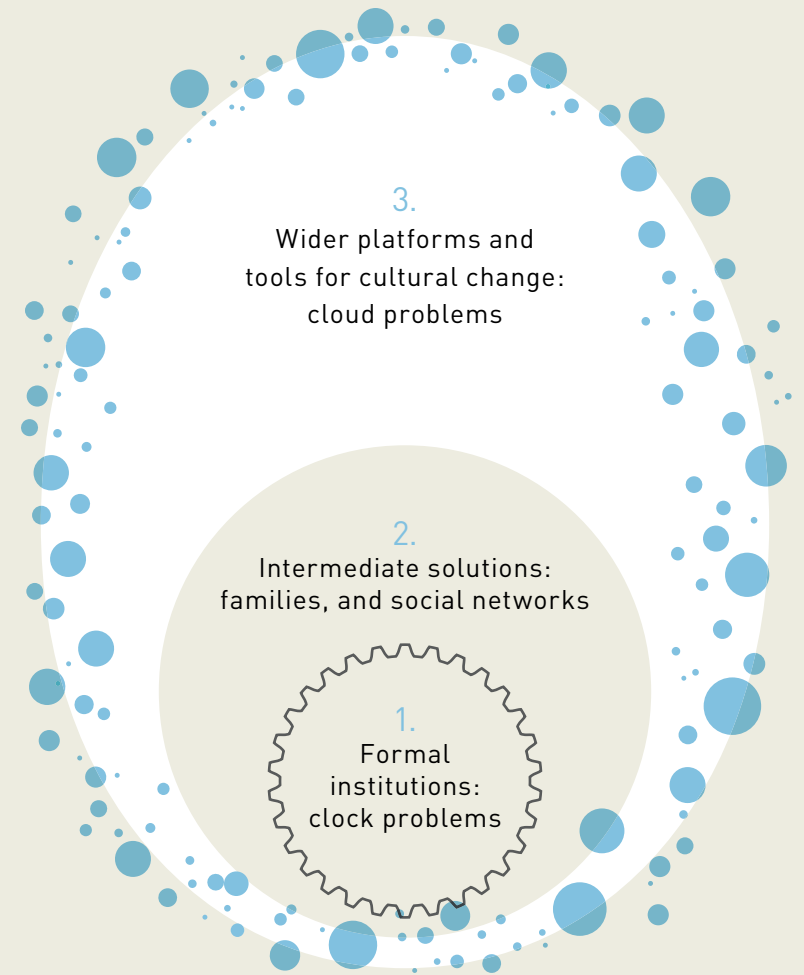
It is easier to focus on clock problems because the tools are available to address them, however imperfectly. Children can be taught if they are in school; reaching them in their bedrooms is tricky. A patient can be treated if they visit a doctor; changing their lifestyles to eat less and exercise is more difficult. A tin can may be recycled if it is put in the right bin; changing how a city uses energy is mind-bogglingly complex.

In the UK, cities have found that the most effective way to reduce deaths due to household fires is not to have more and better fire services but to encourage the mass installation of smoke alarms. For the kinds of challenges cities face—cloud problems—simple, distributed, home-based, preventative technology often trumps one that is centralized, high cost and requires professional expertise. Think home-based fire alarms, not more fire crews.

Clouds are tens of thousands of loosely linked water particles. Cloud problems in cities are made up of thousands of individual choices and outlooks. A cloud will change only if the behavior of these constituent particles changes.

Reforming institutions is difficult but not impossible: they are broken clocks. Changing cultures and mindsets is like fighting a cloud. Clock solutions invariably focus on hardware and professional skills, measurable inputs and outputs. Solutions to cloud problems require new software—cultural and behavioral change that yields intangible benefits of greater trust, respect, tolerance and social capital.

Cities urgently need more effective ways to tackle cloud issues.



The big cloud challenges are in the third circle; all the existing tools and resources, are in the first circle.

Getting into the cloud

Cities often try to solve cloud problems with the tools of a clock maker.

Yet the problems and potential solutions are often out in the community rather than inside formal institutions. Solutions have to get into a city's bloodstream. Jobs are not created on training schemes but in garages and back room businesses. A city is not made creative just by having outstanding cultural institutions. A city's creativity is also evident in a thriving small-scale cultural sector of clubs, bars, galleries and studios.

By the time a problem reaches a formal institution it is often too late to do much about it. By the time a diabetic sees a doctor it is too late to do more than manage his condition. Much earlier intervention would be needed to prevent it.

Public services are most effective when they enlist people as participants to do more for themselves. Motivation is the new medicine, encouraging people to look after themselves better. One of the key issues facing secondary schools is to engage teenage boys with low academic attainment—a task that will be impossible without more real-world learning that motivates them. Motivational solutions need to be localized and personalized to fit with people's lives. Public services have to deliver intimate services at industrial scale.

Even when we address cloud problems directly, our ability to tackle them is woefully limited. As an example take a key health issue—smoking cessation.

The UK government has run campaigns against smoking for more than two decades with tools including public information, advertising, regulation (to limit where people can smoke and where advertisements are allowed), advice from doctors and taxes to increase prices. The benefits have been significant, particularly among the middle class, where the risk of heart disease has been dramatically reduced.

But the techniques that have worked with smoking will not work for other issues. Smoking threatens life. A city cannot threaten people to start learning, caring, recycling or exercising.

We need a new approach that will allow people to participate in creating solutions together that are tailored to their lives. That is where the lessons of Web 2.0—the social web—come in. Web 2.0 is spawning organizations—from eBay to YouTube and Wikipedia to MySpace—that offer new ways to address cloud problems.

Cities that can develop these approaches best will be at a comparative advantage in addressing wider quality of life issues and attracting talent to drive innovation and growth.

Let's look at how the thinking behind these social web solutions might help cities tackle the diffuse problems they face.

The social web approach

Social web organizations are built on a powerful dynamic of participation and collaboration.

They encourage more participation by giving users tools to make contributions, including creating their own websites, blogging, posting videos and photos, rating books, selling items secondhand, contributing to free encyclopedias and engaging in virtual worlds and multi-player games.

However to help people organize and navigate the mass of DIY material, the social web also allows people to share, collaborate, rate, rank, edit and network together.

The more participation the web allows, the more collaboration we need to make sense of the ever-expanding mass of things available. If that process is organized in the right way, then we can become more intelligent, capable and innovative together.

Despite their differences, social web businesses have some common ingredients:

- They motivate people to take part because they provide easy-to-use solutions to common needs: selling unwanted goods secondhand, sharing photos and videos and finding out useful facts. First and foremost, they are practical and solve problems.
- Participants get easy-to-use tools to contribute. YouTube's software is easy, as are a cell phone with a video camera and eBay's rating system and the item for sale form. Tools should be distributed to people so they can devise their own solutions. They are contributors as well as consumers.
- Contributors can connect and collaborate with one another to get things done. Wikipedia is a jointly created product. World of Warcraft and Second Life are shared worlds created by millions of participants.
- Solutions are co-created by people working together, rather than being delivered down a production line. The social web provides a platform on which people can create together.
- Many have a company or organization at their heart that provides the kernel, manages the platform and sets some basic rules of the game.
- But the companies behind social web businesses rely on large communities of participants who are semi-autonomous. These communities are self-governing but ordered, and often rely on a hierarchy, albeit one quite different from that of traditional organizations.
- As some of the users become contributors, the system's dynamics and economics change. In many computer games 90 percent of the content is created by player-developers. A computer game with 1 million players needs only 1 percent to be co-developers to have a developer workforce of 10,000.

Imagine a city that could mobilize commitment and contribution on that scale, so 1 percent of families were co-developers of education for all families or 1 percent of households helped to create recycling solutions for all households.

The more that public services can mobilize at least some of their users as participants—devising, personalising, tailoring, sharing solutions among themselves—the more effective they will be.

The open, participative and collaborative approach of the social web will make cloud issues more soluble.

Go back to the example of education to see how it could work.

The learning platform

If a city addressed learning from the vantage point of these social web models, what could it offer? In the outer circle would be:

- **An eBay for learning:** a city-wide learning exchange to match learners to those with the skills to teach but who are not teachers. For example, if someone needed a tutorial in using garage band software, they could find someone with the skills who may not be a school teacher.
- **The Learning Game:** more learning opportunities modeled on large scale, multi-player games in which players discover challenges and acquire the tools and skills to overcome them together. For example, a city-wide sustainability challenge using maths and science skills.
- **YouLearn:** using the power of user-created video to provide learning opportunities complete with user ratings and comments.
- **Wiki-learning:** a city based resource of facts, figures, information and insight, created by and for the city's citizens for its curriculum.
- **Social search for learning:** using tools such as tagging, folksonomies and social book marking to allow more structured peer-to-peer learning, so that one generation of learners can follow in the footsteps of others.

These mainly digital tools would be augmented by enhanced opportunities to learn outside schools in businesses, libraries, galleries or in settings relevant to what is being learned—the city as a classroom.

The middle circle would focus on families, learning and social networks. That might include:

- **Social networking for learning:** peer-to-peer networks on MySpace, Facebook and other networks to link people in learning clubs to learn with and from their peers, including adults and parents, online and offline, in coffee shops and homes.
- **Enhanced parental involvement in schools:** development of family learning centers; parents as teaching assistants.
- **Get Started:** Increased investment in early years provision for disadvantaged families and linking them earlier to schools that prepare them for learning.
- **NetMoms:** Using social networks to promote mothers' clubs to support informal learning and employment.
- **Personal trainers for learning:** Local learning support workers who would work door-to-door, similar to health visitors.

Schools would still be vital, but they would be designed to maximize the value of the wider platform. For instance:

- Parents and adults might learn in the same building as children.
- Schools could be productive enterprises, centers for small business clusters, in which children run real money-making businesses.
- Teaching by discovery and doing to instill social skills alongside cognitive skills would be much more central.
- Schools would be open longer, more flexible hours, with schedules that suit the different paces that children learn and the times that parents work.
- There would be more, smaller, studio-style schools, akin to cafes or drop-in centers suited for more virtual learning communities and particularly for disaffected teenagers.
- Alongside teachers would be more para-professionals, teaching assistants, business people, environmentalists and artists.
- Children would learn from one another with the creation of a new generation of lead learners.
- Every child would have a self-directed learning support plan to shape what they learn and from whom, in and outside school.

This would be an integrated learning strategy stretching across all three circles that would look very different from the current offer made by most cities.

Learning Feature	Current	Future
Where learning takes place	Mainly in schools	In schools (including studio schools, learning villages and open campuses) cultural centers, businesses, homes, virtual centers and other places across the city
Instructors	Teachers	Teachers, parents, other skilled adults, peers and social networks
When	The school year and according to set school hours	All the time, in different periods that suit individual learning needs
Assessment	End of the line Focus on cognitive skills	During learning for better learning More peer to peer evaluation and self evaluation against learning plans
How	In classrooms, from books, white boards	More real-world learning Schools as productive units
Funding	To schools and school boards	More to pupils, learning and networks
Standards	Top down	More bottom-up targets and self evaluation

The current offer is that education is schooling—a special activity that takes place in special places at special times, in a system where most of the goals and curriculum are set for the student, not by the student. Attainment against those standards leads to a system of grading that has a huge bearing on life chances.

The new learning platform would offer learning all over, all the time, in a wide variety of settings, from a wide range of people. Pupils would have more say and more choice over what they could learn, how, where and when, from teachers, other adults and their peers. Learning would be collaborative and experiential, encouraging self-evaluation and self-motivation as the norms.

The principles and ideas developed for the redesign of education and learning city-wide could also apply to policing, crime and safety, health and well being, care for the elderly, carbon usage reduction and sustainability, and culture and creativity:

	Core	Intermediate	Informal
Culture	Outreach from core cultural players especially into schools and learning	New, more flexible local offerings in culture and public art	Wider platform for cultural production and Pro Am participation using the web
Health	More personalized and participatory health care, expert patient programs, partnerships with physicians	Local walk-in well being centers, local peer support networks for exercise and health, fitness and personal training services	Home-based health care, distributed technologies for monitoring, Internet as first port of call for advice
Safety	Intelligence-based policing, street wardens, para-police for safety rather than crime	Community-based safety initiatives involving local businesses, landscaping, lighting, transport	Home-based safety systems, local watch schemes
Sustainability	Energy and waste recycling systems New forms of city-based carbon charging and trading, including congestion charges	Local shared alternative power generation, car sharing clubs, recycling networks	Changed consumer behavior in the home: carbon budgets and monitors

Using lessons from the social web will allow cities to undertake cultural change and institutional reform in tandem and tackle clock and cloud problems at the same time.

But these strategies are not without risks. They could go wrong in a number of ways.

To do and not to do

- When facing a problem ask: what would an eBay or MySpace -style solution to this look like?
- Build a shared community vision for long-term outcomes that focuses on education and learning, not just schools; health and well being, not just hospitals, and safety, not just policing.
- Create 10-year pathways for change, pulling together plans for capital investment in buildings and technology, workforce reform and community development.
- Work on the three circles at the same time. Do not work sequentially. You will never get much beyond reforming existing institutions.
- Design core institutions to promote a culture of co-responsibility among citizens by making services more personalized and participative; advocate for workforce reform to allow more cross-disciplinary working and expanded role for para-professionals; allow for extended reach beyond traditional organizational boundaries into communities.
- Stop the core institutions from gobbling up all resources. Health systems become devoted to keeping hospitals in business. Education budgets are devoured by teachers and schools. Long-term plans should allow resources to shift out of large, inflexible, fixed assets and into smaller, more localized and flexible provision. Lots of small resources networked together can be as effective as one centralized facility.

- Develop a diverse supplier base to meet different needs. Invest in the nonprofit sector working at the interface between traditional services and households and the community. Draw in private sector providers as new entrants to create alternatives to traditional public provision.
- Turn existing community resources, both public and private, into dual use technologies: museums and cultural centers that can also deliver learning; parks and gyms that can help with exercise and well-being; pharmacies that can augment the health system; schools that can educate children and parents.
- Give people tools for self-help so they can start to devise their own solutions: virtual schools for children to learn at home; home-based health monitoring technology to reduce reliance on hospitals and doctors.
- Build on innovations devised by marginal and maverick users. Person-centered approaches to social care started with young adults with learning difficulties. Some of the most interesting innovations in education started with attempts to re-engage children excluded or disengaged from school. Extreme users will often generate the most interesting innovations. Look for the 1 percent who might become player developers.
- Start innovation in the margins, but plan to take it mainstream. Too much public service innovation gets trapped in the location where it starts and remains a pocket of excellent practice. Too little gets scaled up. Children get occasional opportunities for real-life learning outside of school, but their school experience remains unchanged. Do not treat innovation like a vitamin supplement. The goal is to change the diet.
- Find partners and new entrants to explore the third circle including private sector partners, Telcos and technology companies that want to create more distributed infrastructures for learning, health and safety. Working here will require wider alliances.

- The ideas presented here are not another citizen engagement project or a recipe for more community consultation. This is about engaging people directly in designing and creating services and solutions for issues they face. Mayors have to deliver. This is a new way to do so.
- Experiment with distributing budgets directly to households and individuals to allow people more scope for innovation in commissioning solutions suited to their needs. More consumers will become innovators if they can commission services in new ways. Individual budgets will also force them to take responsibility for their choices.
- Support individuals and families to create service plans that make clear the contributions they and others will make to achieving goals. Every child should have a self-directed learning plan. Budgets will be better spent if people have realistic and well thought out plans against which they can be held accountable.
- Guard against fraud, abuse and misuse of funds with continuing risk assessment, monitoring and review. Keep firm control on overall budgets to prevent cost overruns and allocate decentralized resources realistically to individuals. Do not use more distributed approaches as an excuse for cost cutting. That will be seen as a cynical move to shifting more of the burden onto households.
- Do not try to make everything participative and personal. Sometimes people want a good basic service.
- Avoid new approaches being captured by special interests, who can be the most articulate and loudest. Design support so the least able can benefit as well as the most confident.

Remixing the city

Cities innovate when people mix and mingle, and share and combine ideas from different vantage points and traditions. That mixing takes place on and in shared infrastructures and spaces that bring people together from parks and markets to festivals and debating chambers, churches and universities.

In a city with too fragile shared infrastructures, self-organization can descend into a chaotic scramble for resources. Without shared values and meeting places, cities can fray into disconnected and distrusting communities. Investing in shared infrastructures is not a drain on innovation. In cities, it is a prerequisite for it.

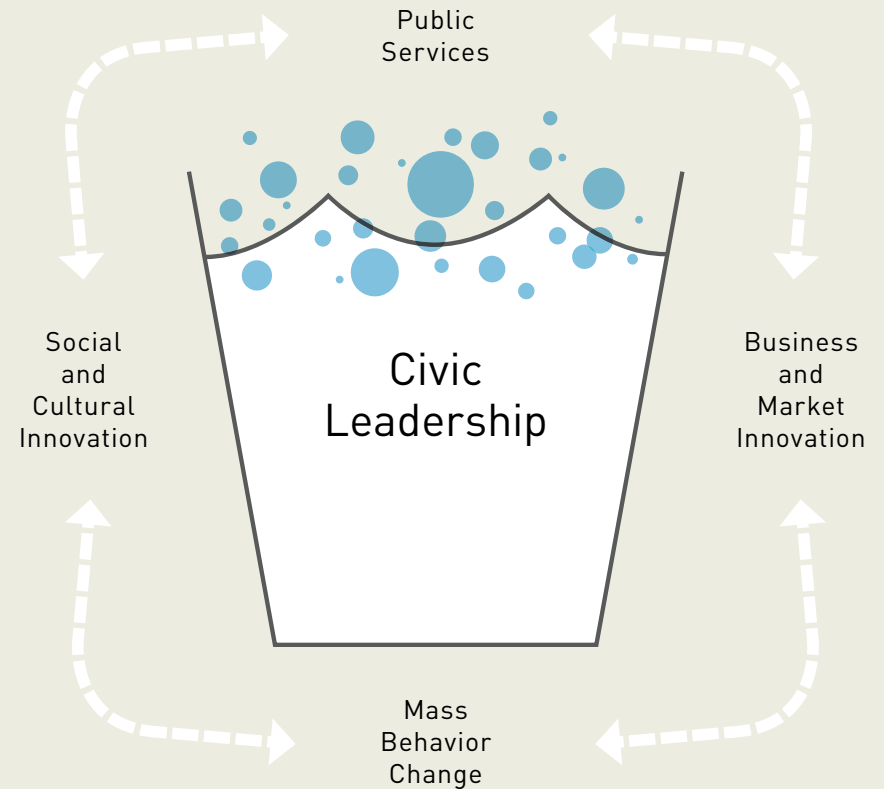
Smart cities have always created shared platforms for transport, irrigation, energy, waste, learning, communication and housing. Postal systems allowed mass peer-to-peer communication. Mass transport allowed people to live away from where they worked in large offices. City maps provided people with a shared view of their city but also a tool anyone could use to find their route through it.

Effective city innovations are shared platforms that serve a multitude of ends.

Civic leaders will deliver better outcomes only if they can put in place platforms that help people create their own solutions on issues that matter: staying safe, being healthy, enjoying a clean environment, learning effectively, having a decent job, looking after the family.

Thanks to the social web, we have the opportunity to create a new generation of these platforms to link reformed core services to more effective self-provisioning by families and localities.

A successful city is like a washing machine: it holds a mass of different things together, in an enclosed space, while mixing them up and moving them around at high speed. City leadership is in the middle of the mixer, like the soap tablet in a washing machine, a small but absolutely critical ingredient in the mix.



The City Washing Machine

CEOs for Cities
177 North State Street
Suite 500
Chicago, Illinois 60601
T 312.553.4630
F 312.553.4355
www.ceosforcities.org