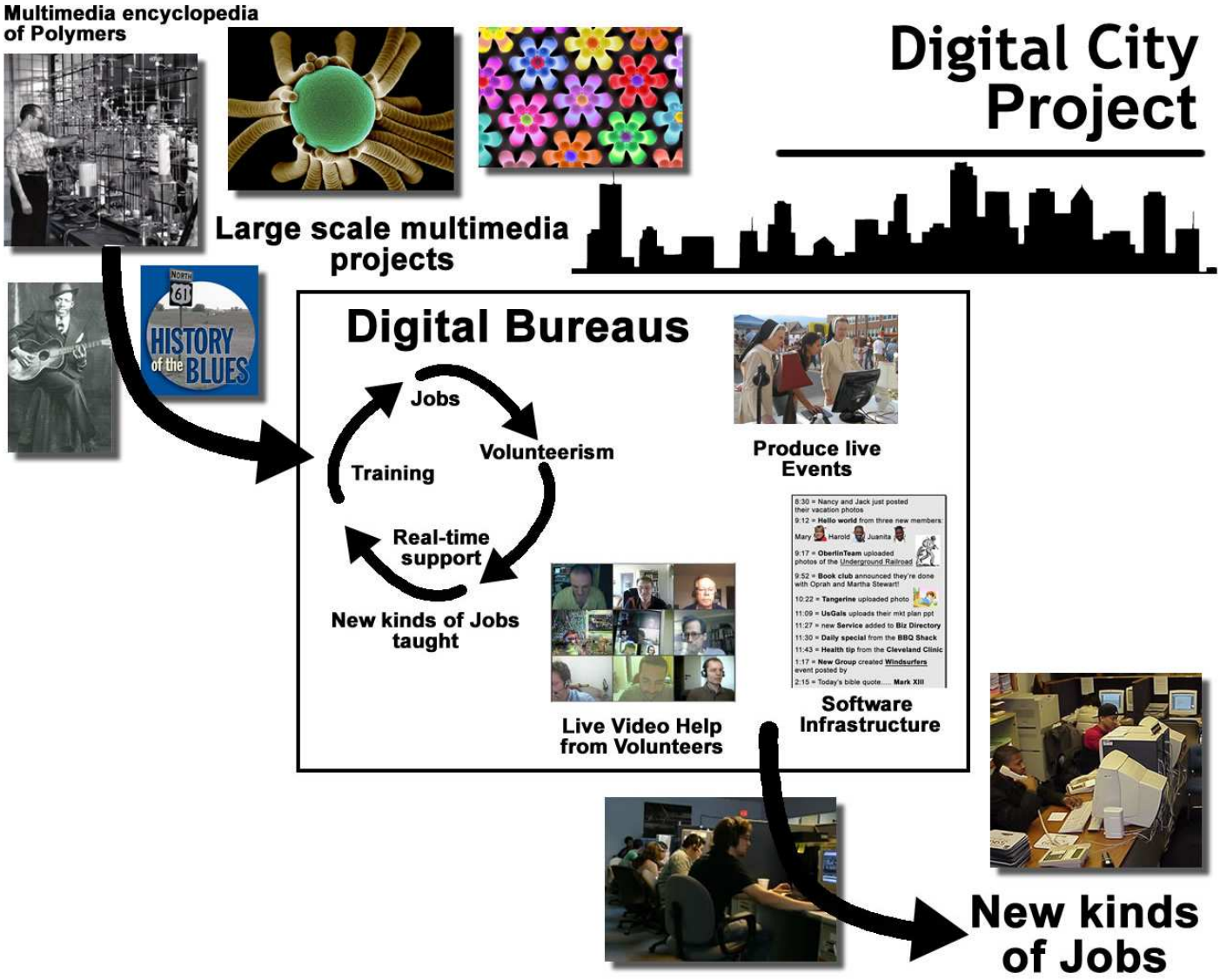
Building a Digital City: our Communal History, Infrastructure and Culture - to be

by Marc Canter
CEO, Digital City Mechanics

Oct. 18, 2010



Intro

Squarely placed at the intersection of our past, present and future is where we live – our homes and the city we live in. Even if we live in a rural or suburban setting, cities still represent the progress, habitat and state-of-society which we communally transfix our efforts and attention upon.

By focusing on our future through the lens of a Digital City I hope to communicate a vision which inhabits the intersection of culture, economic growth and technology infrastructure which will make up our communal future.

Digital Cities will have Digital Citizens who will work Digital Jobs in an environment which utilizes Digital infrastructure to inter-connect people, issues and conversations together.

Digital Cities will leverage public money, foundations and corporate institutional funding to create jobs, empower citizen engagement and provide an open innovation platform to entrepreneurs who will build new companies which will offer services, applications and tools to the city's Digital Citizens.

I believe that large scale multimedia projects are at the heart of a sustainable model that can fuel our Digital Cities. But that's probably because I'm a multimedia guy. Others will find sustainable engines in urban gardening, health services or even community sports programs. Regardless of the fuel that feeds the engine, Digital Cities are a notion of utilizing and building upon on-line technological infrastructure – for a happier, better way of life in the future.

Whatever your core interest, it's clear that our collective futures will involve on-line technology, ever increasingly global competition and marketplaces and a propensity to hyper-local issues and concerns. Regardless of what it is, the motto remains *"think global and act local."*

For the purposes of this article – the local is the Digital City itself. And the vision is one of software infrastructure, new kinds of jobs and all sorts of interactive, on-line multimedia content and services.

OK?

What is a Digital City?

Let's first ascertain what exactly I mean by a Digital City.

If it's a real city, then it's made up of multiple neighborhoods, markets, cultural areas, residential streets, business districts, industrial corridors and infrastructure of all sorts. The notion of a Digital City takes this basic urban approach and applies on-line technology and infrastructure to jobs, local events, entertainment, healthcare – and everything else which makes up the human demeanor.

This rich, multi-layered viewpoint on cities permits me to use a single term like "Digital City" – but refer to many different technologies, real world programs, community interaction and official government intervention and support. There can never be just ONE aspect of a Digital City! It's all about multiplicity!

For a real Digital City to evolve and grow – it MUST have multiple elements of its city evolving to build its future; it MUST have multiple layers of demographics, infrastructure and populace to inhabit the city, it MUST support different aspects and ways of doing the same thing – to hedge our collective bets and guarantee our future. Digital Cities MUST represent multiple viewpoints, opinions and efforts – to begin to approach the multiplicity our future requires and properly handle the distributed architecture which will make up our collective future.

Digital Cities must be built on principles of openness, empowerment of its citizens and support open standards which any vendor can build on top of. For cities of the future to prosper and evolve their OWN open platforms, they must support the notion of shared software infrastructure that all have the right to utilize! These open platforms will become the basis of economic prosperity through the creation of LOTS of new kinds of jobs and services. New companies MUST flourish and policies MUST be established to guarantee competition, transparency and honest open government.

You'll probably be seeing or hearing a lot about what Cisco's or IBM's vision of a Digital City is. You'll probably notice all sorts of planning, promises and vision coming out of all levels of government around the world. You'll almost certainly notice a whole bevy of startups, NGOs and community organizations attempting to build Digital Cities.

And that's a good thing!

Because if there's one thing that can be said about Digital Cities:

"There isn't going to be just ONE kind of Digital City!"

The Digital City project will work with all levels of government, private and public foundations, corporate enterprise, educational institutions and many different kinds of startups and technology vendors to build our Digital Cities of the future. The makeup of the stakeholders will be different in each city. But the vision, architecture and principles are the same.

Read on……

Principles and Strategy

Digital Cities have to be built on a solid base of principles which leave room for a wide range of participants and stakeholders to benefit from. Capitalism has to run free and an open marketplace has to be established which will let both the large behemoths of the technology industry compete, while also leaving room for small to medium sized vendors and startups.

A core principle of the Digital City strategy is to **connect the real-world to the on-line world**. Whenever on-line technology gets put to use, magical things happen. It is the balance between technology and man-kind, between global connectivity and local involvement.

An overriding approach that the Digital City strategy takes is to **emphasize getting local community groups using on-line technology**. Putting on-line collaborative tools to work, building knowledge bases of locally relevant information and connections, anything that puts on-line technology to work.

Our Digital City project will run **Digital Bureaus**, which will become the hyper-local epicenter to our efforts.

We will operate and run a **'virtuous circle' of training and volunteerism** at these Digital Bureaus.

Digital Bureaus will help connect the on-line world to the real world by **producing local events** which will showcase on-line technology and show everyone in the community how THEY can get involved. All they need to do is get on-line, sign-up and go!

Our goal of the Digital City project is to not just train workers in new kinds of job skills, but also to **create the job themselves**.

Many of these new jobs will be in **large-scale multimedia production projects**. These jobs will range from on-line producer, director and designers, to video editors, writers, information architects, web page creators, scripters, coders, testing and QA. Musical talent and sound engineers will work with photographers, cameramen and editors of all shapes and sizes, to produce curatorial and definitive collections of related content and information.

All of the content we produce will be placed onto open data, shared servers with APIs (application programming interfaces) on them which will enable other software and content vendors to exploit and utilize these repurposeful content assets. This will create **an 'open platform' for innovation** that will fuel further job growth.

Machines and bandwidth – for all

Now let's look at all of the elements necessary to build our Digital City.

The most common notion of what a Digital City is – are the computers, Internet connections and mobile devices which make up the "hardware" aspect of one's digital lifestyle. This is how we get on-line, how we compute, organize, communicate, devise, manage, research, buy and sell and in general – act like Digital Citizens.

But hardware alone does not make a Digital City. It's a stack of elements which collectively encompass and make up our collective Digital City.

This stack of elements looks something like this:

Solutions: community programs, training, businesses, contests

Applications and Services: tools, web sites, ecommerce, utilities – all wrapped together in dashboards

Middleware: the Cloud, servers, back-end processes, open APIs

Connectivity: ISPs, mobile carriers, Wifi, Cable modem, Wimax

Hardware: PCs, mobile devices, kiosks

Software Infrastructure

Building on top of hardware and connectivity is a middleware layer of sorts – which is what I call "**software infrastructure**".

If we think back to what our technological infrastructure was in the 1990's, it was Wifi and Internet Cafes. The ability to actually get on-line was a minor miracle to most people as we struggled with our dial-up connections, Wifi cards and 'access points' for over a decade.

As connectivity became easier and we as a people adapted to having digital lifestyles, our notion of what infrastructure is has expanded. Nowadays when you meet someone you say *"OK – what's your email?"* or *"I'll friend you on Facebook."* We all now assume that everyone has an email or a Facebook account and we rely upon these services as a new kind of infrastructure.

This infrastructure over the past decade has been defined as 'social media'; the usage of social technology to communicate, reach out, research, share and associate ourselves as 'Digital Citizens'. Our society now provides us with a basic infrastructure of social media. Facebook, Twitter and Gmail dominate that infrastructure, but there are other vendors as well – and they'll be more in the future.

We all assume and rely upon our social media infrastructure and we're pissed when it goes away – even for an hour or two!

So what is our software infrastructure of the future?

Ah…. Well you've come to the right place. Read on.

Citizen Dashboards

The next key element in our Digital City is the notion of "**Citizen Dashboards**" which are an element of the application layer of our architecture.

Government should provide its citizens with software user interfaces called "Citizen Dashboards." These on-line interfaces (sometimes called 'start pages')would use a Citizen's SS# and Zipcode as a basis for understanding who they are, where they live and what information and community services are available to them. By typing in and registering with one's own Citizen Dashboard, Citizens (otherwise known as 'users') would be handed very specific local laws, regulations, tax info, community event calendars, local directories, help for small businesses and other kinds of 'municipal data' which would be maintained and managed by local government.

All of the information offered by these Citizen Dashboards would be available via open APIs (application programming interfaces) so that any software vendor could offer the same equivalent dashboard, with their own value added differentiation. At the basis of the Citizen Dashboard is an open standards based on-line environment which any vendor would be able to mimic and improve upon.

Citizen Dashboards are based upon a principle I call "**Digital Lifestyle Aggregation**." These dashboards are:

- an **integrated** environment, bringing together one's favorite tools, applications and services – into one interface
- an **aggregator** of people, content and services – so that all of the relevant things to me are in one place
- **highly customizable environment** - where the user can hone in their dashboard interface to their ability level, aesthetics, and balance the complexity of features and functionality with one's own level of ease of use and comfort
-

Community Activity Streams

One of the hottest new developments in the world of social media is the status updates and wall posts that we find in Twitter and Facebook. An industry standard for aggregating all of these 'feeds' into one 'channel' are called "**Activity Streams**." Just think of it as a mega-status feed, encompassing everything.

Imagine if you could find out what your entire neighborhood was up to – both as it happened and also what was planned for the future. This kind of community 'activity stream' is technically possible, but requires an extreme level of cooperation, synchronization and standardization within the stakeholders and members of a community that makes it virtually impossible to happen socially.

It is this kind of cooperation and community spirit which is at the essence of my notion of a Digital City. Local taverns, bistros and bakeries would post their daily specials and what's in the oven. Community organizations, libraries and governmental agencies would post what's new on the stacks, what upcoming meetings were scheduled and provide videos and interactive conversations of the Issues of the day.

Local marketing efforts, salesmen and independent consultants and contractors would all offer their services via this activity stream and multimedia 'mercials would be available for these local companies and services. Nationwide promotional campaigns can be made hyper-local as local coffee shop vendors produce trivia contests around the theme of the upcoming blockbuster movie or sporting event.

So assume that our Digital City would have a shared mega-Activity Stream – unique to every local neighborhood. It might look something like this:

8:30 = Nancy and Jack just posted their vacation photos

9:12 = **Hello world** from three new members:

Mary  Harold  Juanita 

9:17 = **OberlinTeam** uploaded photos of the Underground Railroad 

9:52 = **Book club** announced they're done with Oprah and Martha Stewart!

10:22 = **Tangerine** uploaded photo 

11:09 = **UsGals** uploads their mkt plan ppt

11:27 = new **Service** added to **Biz Directory**

11:30 = **Daily special** from the **BBQ Shack**

11:43 = **Health tip** from the **Cleveland Clinic**

1:17 = **New Group** created **Windsurfers** event posted by

2:15 = Today's bible quote..... **Mark XIII**

Just to be clear – each of the elements and ideas I'm elucidating on – are all part of what I call a Digital City. Each city will have its own instance and personification of these ideas, HOPEFULLY modifying and changing them to adapt to the particulars of THEIR Digital City.

Not only does each city have their own history, populace and regional makeup, but each city has its own industry, aesthetic and approach to life. Certainly the New Orleans' activity stream will look different then the Provo, Utah one! What constitutes an independent on-line worker in Kuala Lampur or Lafayette, LA is completely different than workers in Cleveland or Akron, Ohio!

When I first developed this notion of a Digital City I knew it had to incorporate and embrace the straight world of governmental politics, business development and try and solve the challenge of generating new kinds of jobs for the citizens of the Digital City.

I also knew that a Digital City had to provide an open innovation platform for its local software and content entrepreneurs which would then provide a distributed architecture so that these entrepreneurs can 'mesh' in their new services or applications with the rest of the Digital City environment.

This is the applications and services layer of our architecture. Just think of this as an open version of the Facebook or Twitter platform.

Its' ALL of these elements, combined together with content, academic research, altruistic community service and cultural activities – that make up a Digital City.

Digital Jobs for Digital Citizens

The #1 most important element of any Digital City **are the jobs** which will feed its citizens, keep roofs over its citizen's heads and provide these citizens with a bright future for their family and children.

When I first moved to Cleveland and the NEO region I hoped to help formulate an open software infrastructure platform. But the message I got clearly was ***"where are the jobs?"***

Jobs are what it's all about – figuring out not only how to train and educate folks in what the new jobs of the future will be, but also to find the projects, gigs and work necessary to **put these workers to work**.

My new company **Digital City Mechanics** will not just help train and educate the populace in how to leverage and utilize on-line technology for jobs or the future, but we will also produce **large scale online multimedia projects** which will put these ideas into practice

I believe that ALL jobs of the future will require basic knowledge and understanding of how to use computers, mobile phone, kiosks and other kinds of handheld devices for business purposes.

These skills extend into knowledge of how to operate email, edit docs and wiki pages, upload digital media and manage stored files, run backups,

login into on-line accounts, update data and keep a schedule in a calendar.

I also believe that even the concept of what a **J-O-B** is – will change. Nowadays most economists and government officials still think a job is a 40 hour a week, full-time engagement where workers go to work at the office or factory and stay 'til 5 and then go home.

But pragmatically speaking that's just NOT where jobs are headed!

Jobs of the future will be part-time, project based, flex hours, working at home in virtual workgroups which allows people to work when they want, do what they like and not necessarily work for anyone but themselves. Independent jobs (where the individual offers themselves for hire as a contractor) will grow in number and eventually become a major part of the overall workforce.

It is these kinds of jobs that I'm talking about. It is these kinds of jobs which we'll be training for and preparing workers for the workforce world of the future.

As the details of this Digital City strategy unfold – a methodology will unfold that revolves around creating jobs which would train workers to train others in those same skills and professions. By matching the **haves to the have nots** a recursive knowledge transfer will build our base of Digital City workers.

We'll start off by putting our trainees through a 'virtuous circle' of training and volunteerism. Then we'll offer them internships, which will provide hands on experience to learn new job skills.

We'll show our trainees how to be good Digital Citizens and exist by themselves on-line, using free on-line software and tools. Once our trainees see a computer and on-line software as just some next generation screwdriver or hammer – we'll know we've won!

This is how we'll solve our dilemma of our educational system. We need to train trainers to intern and mentor other workers who in turn will train other workers. That's the only way change is going to happen.

It won't be by radically changing our schools and educational system; those worlds have to play themselves out in their own way. It won't be in changing how job training and workforce development works. That will take too long - eg. it's not job development, it's job GROWTH!

We have **an immediate need to come up with solutions that generate jobs – NOW**.

And that's what this Digital City strategy, architecture and methodology is all about.

We're routing around the status quo of education and workforce development and getting to the heart of the matter – NOW! We can open digital bureaus, start producing large scale multimedia projects and train workers in relevant job skills – NOW! Shovel ready and ready to go - tomorrow.

Every citizen deserves to have a job and it shouldn't necessarily be something they hate doing.

Every government needs to help generate jobs, encourage employers to hire workers and help standardize on infrastructure which will in turn generate more jobs. This is one of the purposes of government.

Hopefully you're starting to understand why a Digital City strategy must be all encompassing, disruptive and pervasive integrated approach – so that ALL can win! Creating jobs is a complex problem to solve.

So I apologize if this Digital City strategy seems complex and hard to understand. Just remember how hard a problem it is – that we're trying to solve!

On-line interactive multimedia content production

Since I believe in these new kinds of jobs, I'd better figure out a way to employ all these people in these jobs! I can't do it alone - but maybe we can launch a pilot project in NEO and show the world one way it could happen! Though I can't guarantee a wide range of jobs across all subject and domain areas, there's one thing I CAN guarantee!

> That there's **a $1T worth of on-line multimedia** that needs to get produced over the next 20-30 years!

This is when I bring in my past history and what I did before – in an earlier life. You see – I started a company called **MacroMind**, which became **Macromedia**. Many of you may know of something called the Flash player –a multimedia playback plug-in which is pervasive around the World Wide Web.

YouTube uses Flash to playback video. Countless animated ads, scientific visualizations and interactive games are all built with Flash. By having a Flash plug-in in your browser, an entire industry of multimedia software developers can target you with moving images, interactivity, sound and animations.

Before Flash and multimedia – the computer world was a staid, plain vanilla, black and white kind of place. We dreamed of making information come to life! We dreamed of interactivity – where users would click on moving pictures, interact with sounds and music and experience imagery and videos tightly interwoven with courseware, games and marketing messages. Terms like "simulations" and "visualizations" entered our vernacular.

At one point 85% of the world's multimedia was created with tools developed by Macromedia. But our vision of a multimedia world came crashing down to reality when the World Wide Web came along. Though the desire for multimedia content was still there, the early web constrained our ability to utilize images and video – because of the slow bandwidth of dial-up connections to the Internet.

This lack of bandwidth took 15 years to be resolved. Nowadays we have YouTube, Hulu, iTunes and Flickr. Today we upload images to Facebook without even thinking about it. So an on-line multimedia world is now possible – and we're starting to see that happen.

But we've got a LONG way to go. Look at the Wikipedia – the leading on-line encyclopedia. 99.5% of all Wikipedia pages consist of just text and a single image.

The reason I'm bringing this all up – is that I have this notion that we can spend the next 20-30 years upgrading the Wikipedia to multimedia. It won't be exactly upgrading the Wikipedia – because that is a single vendor controlled centralized on-line resource. Just try and imagine 100's if not 1,000's of on-line encyclopedia – on every single subject matter that exists today - all created by workers who make a living producing this multimedia. This is the secret sauce to our '**sustainable engine'** for job creation!

But if Citizens won't want to pay for the NY Times or movies or music, who's going to pay for $1T worth of on-line multimedia content? The answer is – **advertisers, sponsors and foundations**!

The world of marketing and communicating with potential customers is worth about $500B a year. Much of this money is moving on-line in various ways – banner advertising, search result marketing, sponsored web sites, promotional campaigns and contests and anything else that will find users on-line.

The basis of our Digital City sustainable engine is what I call a **3:1 model of job creation**:

a) First we pitch sponsors to give us money to pay for an on-line multimedia encyclopedia. These sponsors will get their logos on every page of our content and they'll be able to write off their costs, as we'll be a non-profit!
b) We'll then require the professionals we hire to also train 3 interns in those same job skills they were hired for. This will make sure that our interns will have someplace to work which will put their newly earned job skills to good use.
c) Then we'll take all of this multimedia content and place it onto open data servers, so that any other software developer can access and share these on-line resources and assets.

The driving force of our sponsors is to bring to life a particular set of ideas, concepts and information that is native to their particular industry. Every company has a number of subject matters and topics which can help them by educating the public.

So these sponsors benefit in three ways:

- Their money pays for a project which creates jobs
- They get their logo onto compelling, informative interactive content – in their subject area
- They contribute to an innovation platform which will spawn OTHER applications and services

See below for two specific projects we're working on now:
*a **Polymer multimedia encyclopedia** and **the History of the Blues**.*

Suffice is to say that if we don't have someone to **hire our trainees and interns, we've got nothing**.

This is the underlying problem with job training today. It trains workers for jobs which don't exist.

This is why our Digital City strategy is so dense and complicated. Because we have to, in one single system:

- Work on redefining the term "Jobs" – by helping independent workers and virtual work habits
- Setup and run local digital bureaus – which employ people and offer real-time video help
- Train workers in the skill sets for NEW kinds of Jobs – and work for trainers to train
- Convince sponsors to pay for large scale multimedia projects - which will put more workers to work
- Launch local live events - to connect the on-line world to the real world and employ even more people
- And create a open software platform - which all can use – which will help entrepreneurs start companies, independents support themselves and connect Digital Citizens to their community

---

Three years ago how many marketing departments inside of corporations or enterprise IT departments knew that they MUST have a Facebook page or Twitter account?

In only three years we have seen a complete morphing and evolution of the world of marketing which has embraced social media and on-line advertising and promotions. No rock band, book tour, movie launch or consumer product would dream of NOT having a major component of their marketing budget spent on-line.

THAT's the world we're going after!

Our 3:1 sustainable model enables marketers to pay for compelling on-line content that is exactly the information they want their customers to see their brand and logo associated with.

Our 3:1 sustainable model will get our sponsors associated with creating jobs which will benefit them locally, where they live and invest. This helps build their relationship to their local employees, customers and community and produces a 'glow' or magic *juju* which will rub off on the brand.

Our 3:1 sustainable model will enable our sponsors to get tax write-offs on their sponsorships and help fund innovative open platforms, which will further create jobs and push the envelope of 'software infrastructure.'

Citizen Engagement

Another powerful aspect of a Digital City is empowering its Citizens to have an active voice in the decision making process on public policy, so that they can disrupt the current status quo of politics and how we elect our government officials. This is a system that sorely needs improvement and each set of local Digital Citizens get to decide how they want their government to be setup, run and improved.

This is the goal behind the effort called the **Civic Commons** – which I am the CTO of. We hope to provide tools to local citizens so that they can engage with each other over issues that are relevant to them in their own local neighborhoods and region.

We are completely content agnostic – based upon the premise that each region and electorate can make up their own minds how they wish to be governed and what they should do about their own local issues and challenges.

I believe that Citizen Engagement and disruption of the status quo are also foundation notions of a Digital City.

Putting on-line tools to use to connect people together to issues in the real-world is what the Civic Commons is all about.

Whenever we see the online world connecting to the real world – we see traction and good things happen!

Collaborative Tools

On-line collaborative tools connect people together in a virtual environment.

It is these virtual environments which not only make up our workplace but also become the foundation of our 'digital lifestyles'. Every Citizen's Dashboard is their waystation from whence they launch into their tools, access their content, and interact and collaborate with each other.

This world of on-line, virtual interaction provides us the flexibility and freedom to travel wherever we want, and continue to meet, work, collaborate and engage with our colleagues, customers and employees. This is not just within the confines of any one vendor's tool suite, platform, browser or operating system. This is an open, distributed environment where different vendor's offerings can be mixed and matched to the end-user's delight.

Our Digital City software environment will enable user's (otherwise known as Digital Citizens) to connect their existing on-line accounts into their customized dashboard, which will also aggregate with other social graphs, content feeds and wide range of web services.

On-line collaboration is achieved by utilizing email, wikis, applications like Google Docs or Zimbra. These tools will enable us to maintain on-line persistent projects, product lines and a wide range of services – that could just as well be done in an office environment, but work just as well virtually – at home or on the road.

Everywhere I go I volunteer my time, ideas and energy towards getting local organizations to 'go on-line' and utilize on-line collaborative tools. It's the easiest, free way I know to start building a Digital City – NOW!

I mentor and support organizations in setting up wikis, utilizing shared calendars, creating web sites, publishing content onto Facebook and Twitter – and in general – 'become geeky'.

The idea is to get people using on-line technology as a hammer or screwdriver, to think of this new technology as a set of general purpose tools to "get things done".

This is the touchpoint where our local citizenry becomes technically astute and aware.

Here are some of the on-line collaborative tools I've been utilizing in our summer internship programs and with some of the local community organizations we're working with here in Cleveland and NEO:

- **Gmail** (or any on-line email service)
- **PBworks** (which is a wiki – but any wiki will do)
- **Google Docs** (on-line word process, spreadsheet, contact list, presentations, storage, groups)
- **Google Calendar** (for shared scheduling)
- **YouTube** and **Flickr** (or any media repository service)
- **PeopleAggregator** (which happens to be the social network I own, but there are others…)
- **Facebook** (which connects to PeopleAggregator)
- **DropBox** (for sharing files between your various machines, but also with your collaborators)
- **Google Maps** (or other mapping services)

Digital Bureaus

The central strategy in building a Digital City is the establishment of hyper-local nodes – which I call "**Digital Bureaus**" out in the neighborhoods themselves. Digital Bureaus are not housed in fancy downtown offices, but are setup in local storefronts or community centers which have been converted into a sort of open web job training center, which also produces large scale multimedia projects, mounts local events and provides a real-time video help service.

It is from these local Digital Bureaus that our Digital City takes on a distributed nature, with local 'nodes' representing the populace, culture, history and aesthetics of a particular neighborhood. The entire Digital City is then made up of the aggregate of all of these local nodes, with one or more 'central offices' also part of the network.

A typical Digital Bureau would have 20 machines in it and 20 employees – 8 full-time and 12 interns. The interns would only be paid for three months of service - achieving 'internship' status after successfully completing the first two levels of a ***'virtuous circle' of training and volunteerism***.

The Digital Bureaus would accept any trainee or student from the neighborhood and put them through the initial level of the training process, weeding out those who are not properly skilled, focused or motivated. Trainees are awarded points for all on-line tasks they complete, in addition to points for local neighborhood efforts they volunteer for.

Once this initial level of training is complete a trainee can move to the second level of the virtuous circle by accumulating enough 'points' and inviting in friends to the same virtuous circle network. This sort of 'viral' participation and organic growth is one of the foundations of our unique methodology.

The second level of training and volunteerism would take trainees through detailed instructions in the usage of wikis, social networks, publishing systems, media management, interactive authoring and community liaison work. This level of achievement firmly grounds the trainee in basic social media techniques and acclimates them to the principles and foundations of our methodology. Our system gets trainees pro-actively commenting, rating, creating and sharing within the on-line virtuous circle environment. These are the activities and key components which are required of Digital Citizens. Bringing together on-

line skills and putting them into the context of one's local community – is the goal of all of our Digital Bureaus.

Once our trainees have completed the first two levels of our virtuous circle training, we will award them with a three month internship. These paid internships will get our interns involved with specific multimedia productions, building on-line content in a myriad of forms and situations.

We will take our intern workforce and build local multimedia business directories, help out local community organizations, schools or churches and help found local startups, consulting groups or support teams.

Multimedia production work will not be the ONLY activities and projects where we'll put our trainees and interns to work, but multimedia happens to be the one area where I bring reputation and credibility. But only about 20% of the populace will ever do the kind of "creative" jobs which are required to produce on-line multimedia.

There will be a number of other 'job categories' which our virtuous circle process will 'train' our interns for. Sales, marketing, operations, support, services and a myriad of independent job professions will also be 'taught' and mentored at our Digital Bureaus.

There can be a number of different configurations of Digital Bureaus, which would focus on different constituencies and demographics.

Why shouldn't our methodology and program be offered to seniors? Or Baby Boomers? Or Moms who've retired and now want to get back to work? Expect to see daycare and kid friendly zones at Digital Bureaus geared towards families and single welfare Moms.

Expect to see Digital Bureaus associated with urban gardens and local foods, with kitchens available for citizens to prepare their own food from the gardens. Expect to see Digital Bureaus for the re-entry population (people who have recently been released from prison) or Digital Bureaus embedded in senior care facilities.

We even imagine Digital Bureaus set up in church basements, un-used office space or union halls.

The point is that many configurations of Digital Bureaus will be available, each of them serving as a hyper-local node in a distributed architecture. This distributed approach of tiny nodes in a network enables for easy scaling up of this Digital City approach, so it can spread quickly.

Think on-line and virtually, but geek out at the corner storefront.

Work with the Community

Putting all this technological knowhow to work is our greatest challenge. None of the tech matters if it doesn't directly affect the lives of the city's citizens. No one system can solve the problems of all, but establishing open platforms, preaching 'on-line tool usage' and producing lots and lots of on-line multimedia content can help.

Establishing Digital Bureaus out in the neighborhoods is also a key element to this strategy.

Connecting the real world with the online world is the underlying premise of a Digital City.

Working with community organizations to show them how to utilize on-line technology, Citizen Dashboards, Activity Streams, work with our local digital bureaus to produce relevant local multimedia and train our workers in how to become independent on-line contractors are all key goals of the Digital City.

On-line tools can help community organizations organize and plan events, build (what are called) *'knowledge bases'* of information and market themselves – to attract volunteers, fund raising or event production. Community organizations or individuals can use on-line tools for scheduling, coordinating logistics and teams of people and for budgeting and research.

Once Digital Citizens feel comfortable using on-line tools they can identify who they have to talk to – to obtain permits, pay fees or schedule news conferences. Staying on schedule and even just showing up on time for meetings are basic skills which can all benefit from on-line tools, applications and services.

Our methodology teaches that on-line tools are the next generation screwdriver or hammer. They're just tools which can be utilized in many ways, shapes or forms. Connecting one's dashboard to all of the appropriate tools and showing one's local community organization how to set up their own dashboards is one set of volunteer tasks we'll be promulgating.

Showing local organizations how they can publish a newsletter to a web site, Twitter or RSS feed, Facebook page and still print it out on paper – all from the same CMS (content management system) - is another example of how our 'Digital City' volunteers will help out.

Volunteer coordination, event management, media production and independent small company consulting services (such as book keeping or office management) are other skill sets we'll be deploying directly into community organizations.

Produce local Solutions

Now that we've laid out much of the ideas and concepts behind our Digital City, let's turn to pragmatic deployment issues which put these concepts to work.

When I came to Cleveland I found many, many well intentioned efforts, organizations and individuals trying their best to make change. They'd hold meetings, write down everything that transpired and schedule the next meeting – hoping that others would show up and volunteer – as well.

These organizations might have a newsletter, web site or Facebook page – but they rarely put online technology to full use. If we can get even 20% of these local organizations working more effectively and productively by leveraging social media, on-line collaborative tools and connecting their on-line world to the real-world – then we'll be achieving OUR goals – as well.

This is the top layer of the Digital City architecture stack – solutions.

Combining technology, people and community involvement into a comprehensive strategy for growth, empowerment and enrichment is what solutions are all about. We're not talking about promises and expectations – we're talking about what's going on right now.

One such effort was a summer internship program I ran the summer of 2010 with 18 STEM high school students in Cleveland, Ohio. In six weeks the **Futuristic Young Ideas** (FYI) summer internship program:

- wrote, shot photos and video and produced a book: **www.blurb.com/bookstore/detail/1587692**
- created a web site, with eCommerce, video and articles: **futuristicyoungideas.com**
- produced a video documentary of the entire summer internship program, which had 100 STEM students participating in 25 programs: **www.youtube.com/watch?v=mZTk0la2VO0**
- put on auditions and produced a live talent show (Aug. 25th and Sept. 11th, 2010)

The students came to the program with Gmail and Facebook accounts. They were told that they'd have to sit in front of Facebook and YouTube all day long – and get paid for it. I asked them *"what do you REALLY want to do"* and thus – we were able to get around the dreaded expectations of *"what does this boss want me to do – which hopefully I won't be so bored at and hate – that I'll despise him within two weeks!"*

Our summer internship program did not allow any paper in the classroom. We only used on-line tools for creating, communicating, organizing, planning, coordinating and scheduling.

I utilized this program to start to develop our "Digital City methodology" of training and volunteerism. I had local artists, editors, PC and logistics experts come into the classroom and work with the kids on their individual projects.

The results of these efforts can be seen at: **FuturisticYoungIdeas.com**

Other kinds of community solutions are in the works.

- **theCivicCommons.com** – an effort to enable citizens to engage with each other on-line around issues and people
- I'm working at **Case Western Reserve University** on:
    - a new effort called '**think[box]**'which will encourage and support *entrepreneurial efforts*.
    - the '**CaseConnectionZone'** – which has installed 1G fiber connections into 104 homes and apartments on a local street called Hessler St. – directly adjacent to the campus. This infrastructure will be utilized as a research platform for new and interesting on-line solutions.
- We've created a network for local artists and technologists to meet and support each other:
  ingenuity.digitalcitymechanics.net/home
- I'm working with the **Inter-Generational school** edible garden project:
  sites.google.com/a/case.edu/fairhill-partners-forest-garden-information-and-research/
- I'm helping local incubators like **LaunchHouse** and **Business Greenhouse Ventures**.
- I'm volunteering for the **Shaker Heights 2012 Centennial celebration**.

That's what I'm doing – and imagine what will happen when 10 people like me start volunteering and helping out!

I'd love to see local information kiosks scattered throughout the region, enabling anyone access to their personal dashboard. I'd love to see free equipment and bandwidth available for all to get on-line.

But first we have to get funding to achieve even a smidgen of these goals.

That's why I'm writing this white paper – to get us pointed in the right direction.

Volunteerism

The Haves will help the Have Nots.

That's a theme I'm seeing everywhere around the world. Many of us are blessed to have jobs we enjoy, and do work that we actually enjoy. So we're willing to volunteer and help others pull themselves up by their bootstraps to help themselves.

Not only will we ask our virtuous circle trainees to volunteer for local community tasks, but we'll also provide two ways for skilled, employed volunteers to help out and become an intrinsic aspect of our methodology.

All of our software will have embedded real-time video help – so that any trainee can simply click and get a live human help operator appear on the screen. These help operators are our volunteers.

We're also going to put our volunteers to work mentoring and helping our trainees learn particular job skills – as we fan out and attempt to cover a wide range of job categories. These volunteers can handle more than one intern at a time and 'graduate' these intern with skill levels ready to be deployed out in the real world marketplace.

Open: Platform, Source, Data, Ideas

Throughout this article I referred to **open platforms** which will foster innovation and provide software infrastructure to software developers.

These sorts of on-line software platforms will not be controlled by any one on-line vendor or government.

It is the technological personification of a *free and open marketplace*, standing on the shoulders of the **open web**.

Open is the key word here.

Open source – means that anyone can get a copy of the source code and modify the code to their liking.

Open standards – means we all adhere to single standards so customer lock-in is prevented.

Open data – means that we don't have to PAY for access to key information and that other software developers can use this data – for their own applications and services.

Open platforms – are an enabling software infrastructure which support open standards, offer citizens free dashboards, feature community activity streams and shared timelines (of a region's collective history) and serve as a basis for a 'virtuous circle' of training and volunteerism.

> Ideally our Citizen Dashboard concept will evolve into a series of open standards which can be supported and deployed on a wide range of vendor's dashboards. NetVibes, iGoogle or MyYahoo can support these standards on their 'start pages'.
>
> Facebook or MySpace could support these standards in their social networks.
>
> Wordpress or Blogger could support these standards in their blogging tools.
>
> And a 100 independent startups could support these standards and have access to digital citizen's friends, content, media or activities – on an equal basis – with no one vendor having an unfair advantage.

Open standards mean no one entity controls them or manipulates the marketplace for their benefit.

For our Digital City to take shape, we need a series of open standards which will 'weave together' a mesh of inter-connected vendors' offerings, interactive content and people.

Connect the on-line world to the real world

It should be apparent by now that the underlying concept of **connecting the real-world to the on-line world** can be a powerful technique for building a Digital City!

It is under this umbrella that all of our Digital City's activities are produced. Producing live events gets people together in the same place.

Walking up and down the street creating on-line business directories utilizes the open web to connect customers to vendors and services.

Going into the classroom and making sure our youth feel comfortable utilizing on-line technology.

Working with local community organizations to show them how to harness the power of on-line collaborative tools.

Working with local industry, government and enterprise to get them to sponsor jobs, content and open innovation platforms.

These are all the real-world activities that a Digital City needs to undertake to leverage and build on the on-line world.

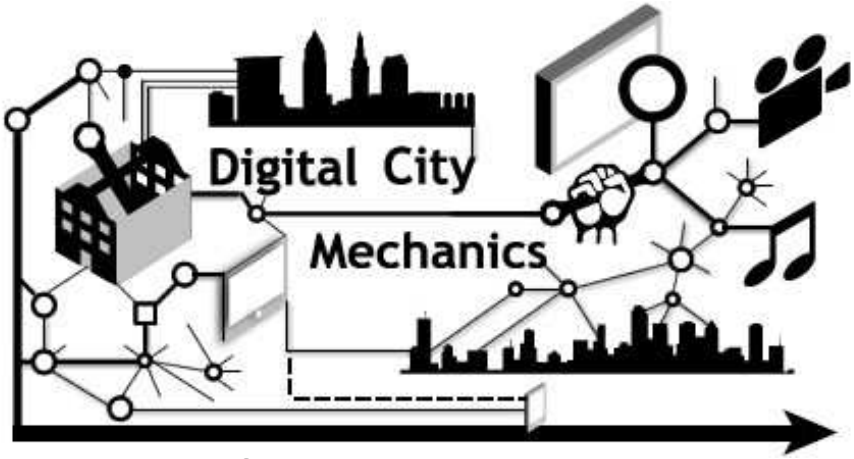
New kind of System Integrator

Putting all of these pieces of the puzzle together is done by a new company I have founded – called "**Digital City Mechanics**" (DCM.)

I have moved my family to NEO (North eastern Ohio) and plan on staying here, utilizing the region as a pilot program for this new approach to creating jobs.

Hopefully (if everything goes well) our open source, open standards, open ideas approach will spread around the world, at which point DCM will be a sought after commodity!

This strategy is really that of a system integrator – providing services to cities around the world – all of which hope to become a Digital City eg. we're competing with Cisco and IBM!



Research and Statistics

One of the by-products of working in an academic environment and partnering with CWRU as our non-profit partner is that we can set up formal research studies which will bear proof of the effectiveness of our approach and methodology.

This quantitative research results will help us – when we try and bring this methodology to the rest of the world.

So I plan on working on a Phd. and producing qualitative studies which will PROVE that we can create jobs – on an on-going basis. Something tells me this is something people are interested in!

Building and Entrepreneurism

In conclusion – building a Digital City requires entrepreneurism at all levels.

It requires investors who are willing to take risks, it requires thought leaders to productize and commercialize their ideas, research and collaborations and it requires employees who are willing to work for entrepreneurial startups.

All sorts of new startups will find their home in Digital Cities. These are the entities which will mesh together and build their Digital City – together.

All of these kinds of people will be taking risks, building our collective future together and connecting to each other, so that we can make each Digital City a reality. On-line vendors may wish to serve the entire world wide web, but they ultimately live in one place and must serve their own local city – as well.

Since all of our code and ideas will be open source, anyone around the world can download our code and utilize it themselves – to build their own Digital Cities.

Conclusion

So these are the ideas which make up the Digital City project. My new company Digital City Mechanics is applying for grants, pitching sponsors, engaging with local community organizations and schools and designing the interfaces, methodology, curriculum and programs for Digital Cities.

Now we need to establish the relationships, sign contracts and receive grants and ultimately build the trust and credibility necessary to make this all happen.

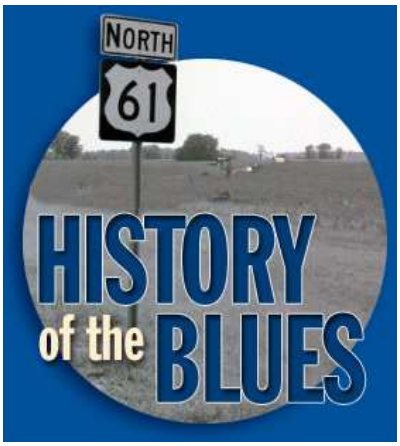
Addendum: details

OK – consider the past 22 pages an intro.

Please find below an addendum section outlines of the two potential multimedia projects which would feed a sustainable engine to create jobs in Cleveland and NEO.

Please also find a list of details on additional software infrastructure components which would be part of our free and open innovation platform.

History of the Blues



I am from the south side of Chicago and my guitar teacher played with Muddy Waters. I went to the Checkerboard Lounge (at 43rd and Vincennes) when I was 16 years old (I was losing my hair early!) So I was raised on the blues and play blues guitar and sing myself.

One of the landmark institutions in Cleveland is the "**Rock and Roll Hall of Fame**." Here is the initial proposal we have submitted to form an alliance between the Rock Hall, Cuyahoga Community College (Tri-C) and a major financial institution or sponsor to fund and co-produce a wide range of compelling on-line multimedia content, games and educational materials around the theme of the "**History of the Blues**."

This project would not only include fun and entertaining interactive educational content, but it would also produce and supply repurposable multimedia assets, designed to be utilized by OTHER multimedia developers.

This content would go onto the Rock Hall's site – but given away for free – courtesy of our sponsoring partner – whose logo would go onto every page.

The "**History of the Blues**" project would create:

- Compelling on-line games, simulations, documentaries and interactive content
- Jobs for local professionals, intermediate workers and interns in a wide range of multimedia production skills
- Open data servers which would provide reusable assets to software and content developers around the world

Intro

This proposed joint-venture would be between the Rock Hall, Digital City Mechanics (DCM) and Tri-C. The project would produce several years' worth of compelling multimedia content, games and reusable assets based on the theme of the "**History of the Blues**".

This project would provide the Rock Hall several different compelling on-line experiences which would be hosted at **rockhall.com**, ranging from musical games and historical documentaries, to musical timelines, customized blues simulations and real-time blues enthusiasts communities. The project would produce a definitive collection of ALL on-line Blues information and provide world-class commentary, analysis and remixing of the world of the Blues – all via open APIs (application programming interfaces.)

Beyond just producing great interactive art, this project would also be used as a vehicle to create jobs in Cleveland and North Eastern Ohio (NEO.) The program would require all professionals working on the project to train three (3) interns in those job skills which they were hired for. These interns would be graduates of a 'virtuous circle' of training and volunteerism that DCM would be operating – at several local neighborhood 'digital bureaus'. These bureaus would train workers in basic on-line tech jobs skills and cherry pick the best and brightest interns to work on the "History of the Blues" project.

All of the content produced in this project would be available for free usage to software and content developers around the world– for them to use in THEIR on-line content, games, simulations, educational materials, etc. This open attitude towards usage rights (especially under the spirit of 'the Open Blues') will help establish the Rock Hall as a leader in this new world of on-line music.

This project would approach sponsors and offer them an opportunity to help pay for a 3:1 sustainable model for creating jobs on an on-going basis. The model offers sponsors a non-profit tax write-off contribution which would:

- Pay for multiple years of professional level on-line multimedia content development work
- Require all hired professionals to train 3 interns in those same job skills which they were hired for
- Take all of the resultant sponsored content and place it onto open shared servers, with open APIs – thereby enabling other developers to access and utilize this repurposable on-line multimedia content

This project is part of the Digital City project – founded by Marc Canter, who has recently moved to the Cleveland/NEO area. Marc was the founder of MacroMind, which became Macromedia [MACR] – and is widely considered to be one of the founding fathers of multimedia.

Marc's new company would produce this content in conjunction with experts in the Blues – and the Rock Hall – as well as work with recent graduates and students of Tri-C – where the Rock Hall's archives are stored.

The Digital City project is designed to train and create new kinds of jobs which will help resuscitate Cleveland and other urban areas where on-line tech job skills can be adopted to a myriad of jobs.

The following are the different aspects and deliverables of this proposed project:

Interactive documentaries

- The story of any people, music or trend can best be told via documentaries. In the case of "the Blues" much is known, but much has been passed down through oral tradition and real-world lives and activities. So documentaries retrace these stories and weave a quilt of history.
- Original interviews and shared timelines could provide Blues History buffs the ability to filter and put together their own historical records or compilations. Artwork and what video footage that is available can be made available for remixes, mashups and be utilized for educational purposes.
- In depth analysis of key songs, melody lines, rhythms, bass lines and chord progressions can be made available and any of those media elements can be repurposed for any other kind of creative output or educational purpose.

Blues Musicians on Maxwell Street, c.1950-1951

Interactive learning tools

- On-line interactive software can be developed to teach students and fans about unique Blues styles or Blues repertoire.
- Particular musical sequences can be made interactive, allowing end-users to remix their own 'Blues Jam'.
- Students can learn of the influences one Blues artist has on their successors.

Social Game and Dashboard

- Rockhall.com members could all join a social network of like-minded fans, which would incestuously be connected to Facebook and Google's upcoming "Google Me" platform.
- In the social world, one's MySpace band page can be connected to the same Twitter account which also posts on their Facebook page- all brought together on the RockHall dashboard.
- Mobile based activities could be made compatible with FourSquare and tie into restaurants and bars around the world, and put a geographical historical context of the Blues into the 'equation'.
- A social game could be developed that would take the History of the Blues and utilize it as a theme engine for live role playing scenarios. Scavenger hunts, on-line trivial pursuit, expertise in the History of the Blues and a virtual sense of having fun would all be combined together into a compelling, real-time social game.

Reusable multimedia assets

This project would methodically make available entire archives of the definitive collections of all of the major Blues legends. These assets would include:

- Video
- Photos
- Posters, tickets, memorabilia
- Radio shows
- Music
- Sound EFX

All of these assets would be made available via open APIs – which would include software developers, story tellers, historians, comedians, political activist groups, health oriented activists, educators and practically anybody else.

In-class curriculum

This project would produce in-class room tutorials, lectures, teaching aids, tests, contests and educational materials that would implement this curriculum into schools, public or private – around the world.

Children everywhere would be taught the "History of the Blues" courtesy of the Rock Hall in Cleveland.

Make your own "Ken Burns" documentary – customized……..

- Select which artists, when
- Which region, and what styles
- Track their Influences – produce a tree of artists/influences

All sorts of interactive projects, storytelling, remixing, etc. can be developed for $5M. Over a 4 year's period of time.

This is the goal of this proposed program.

Polymer multimedia encyclopedia

Another project we are driving is the "**Polymer Valley Alliance**" and an effort to produce a Polymer multimedia encyclopedia.

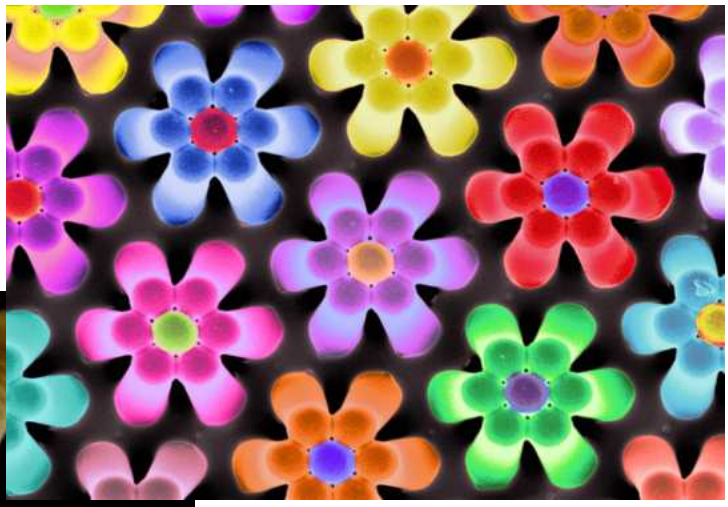
This alliance (between CWRU and UAkron) would create visualizations, simulations, tutorials, games, and all sorts of animations and videos on Polymers – A-Z.

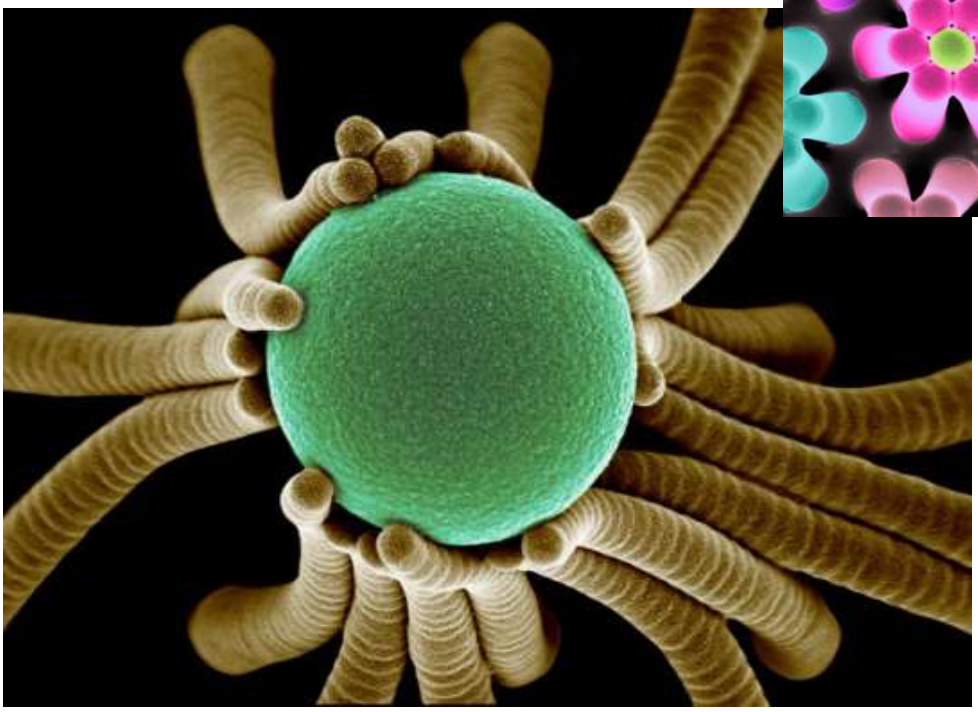
Polymers are an $89B business in Ohio and we hope that we can find sponsors who will want to help create jobs, compelling content and provide re-usable interactive multimedia content – for others to use – as well.

Polymers are a ripe topic for visualization, simulations, interactive learning and creativity tools, animations, videos and learning aids of all types.

Our Polymer multimedia encyclopedia would employ workers for many years building out compelling on-line experiences for all ages.

Here are two images of Polymers which will give you an idea of rich and fertile this world is….





Other kinds of software infrastructure

Shared timelines

Image taking video interviews transcripts and tagging them with both geo and Time based “tags”.

Now imagine a software user interface of a timeline, which allowed one to ‘dive’ into Jan. 1933. The tagged interview segments on Jan. 1993 would appear and local oral history can be told.

Now imagine this timeline layered with local historical milestones, cultural trends and other groups of people and then make all of this data open, and available through APIs. This would result on a ‘shared timeline’ of local history, which would represent the ‘region’s history’.

This is an example of software infrastructure that anyone can benefit from and creativity and education can flourish around. We all own our collective history and it is possible to exemplify that history through video, audio and photos. That multimedia should be shared to all of the city’s citizens and utilized ot create new kinds of applications and services that it’s inventors can profit from. But the core content itself is in the public domain.

We will be building a shared timeline here in Cleveland and NEO by contributing video oral history collections from the people who saved the Doan Creek from the Clark hiway project. We will also do interviews around some of the original clubs, restaurants and Jewish Delis in Cleveland and other forms of city life. We will also tie in the history of the early settlers of Cleveland, like the Shakers and the history of the Underground railroad.

We will document the rise of progressivism in city government through the administrations of Tom Johnson and Newt Baker and we will chart the evolution of the industrial revolution, monopolies and the demise of the manufacturing base in America – all clearly represented in Cleveland and NEO’s regional history.

Cleveland and NEO is a region rich in history, but so does every city and region have its own history.

These shared timeline servers will become a key element in our ‘software infrastructure’ of the future.

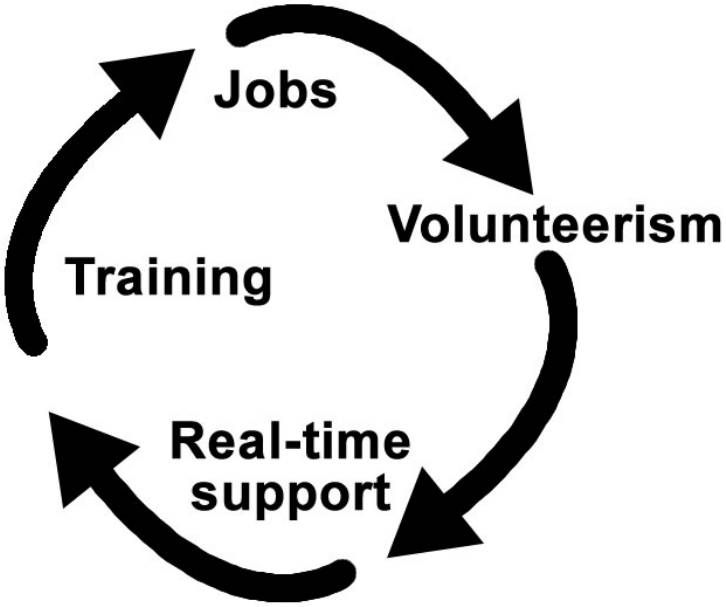
Real-time live video help

All of the on-line software offered by our Digital City platform will come with built-in real-time video help. This technology will enable a human to come up on the screen to answer any question any of our users may have.

The notion of built-in video help defines a new level of 'software infrastructure'. This not only guarantees lots of new jobs, but also enables us to match seniors-to-seniors, kids-to-kids, etc. In the beginning these video help operators will need to be our volunteers.

Then as our trainees graduate from our virtuous circle, some of them may become employees of DCM and work as video help operators. Or they may take those skills and go off and create their own company or work at other entities – utilizing the skills they learned through our virtuous circle process.

This circular process of Jobs->Volunteerism->Real-time support->Training->Jobs is part of our virtuous circle process and helps us stay connected to producing jobs:



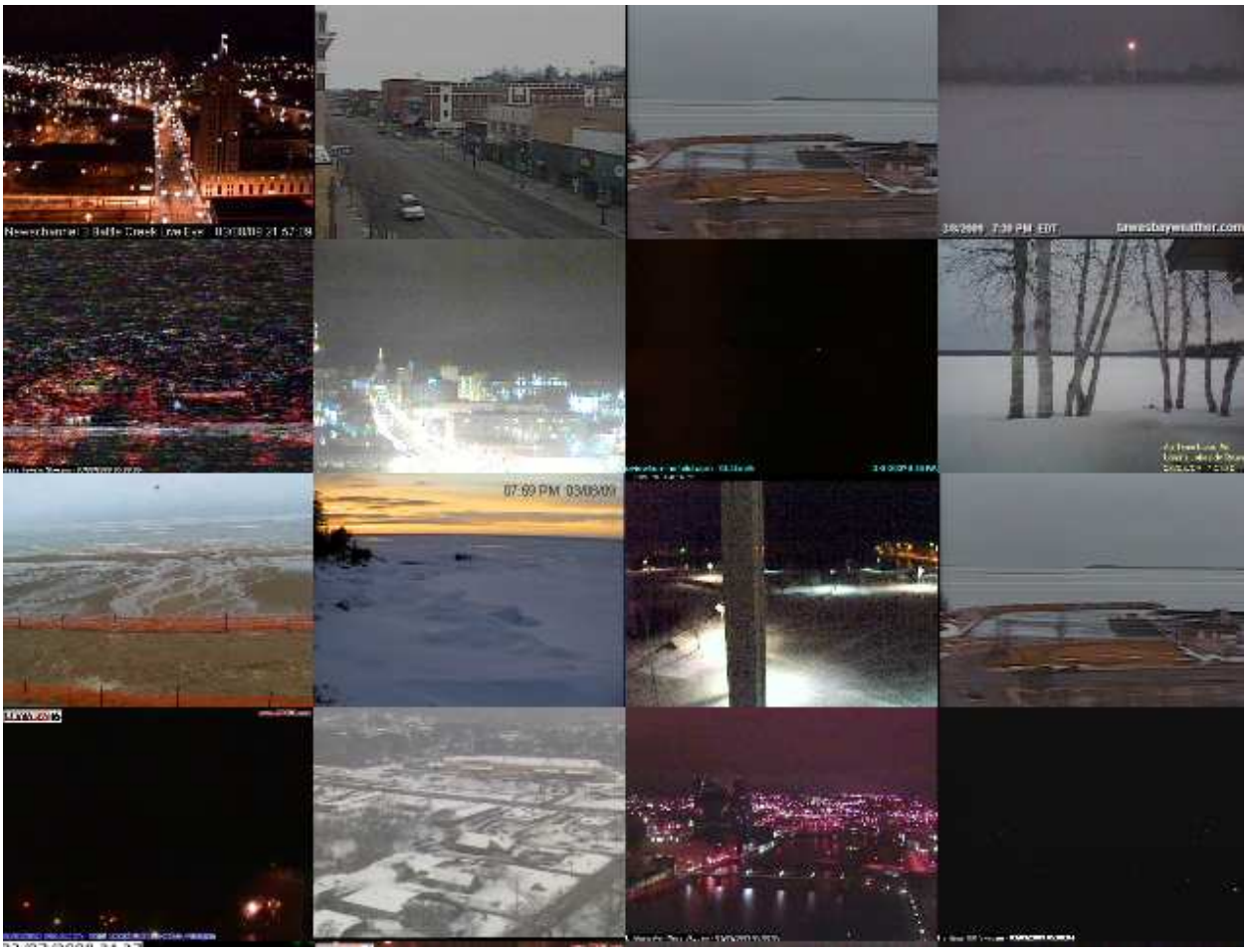
Real-time video help operators will become a highly skilled profession as these individuals learn unique job skills which can be offered in real-time on a JIT (just-in-time) basis around the world.

Directory of Webcam location pages

Cities are full of surveillance cameras and webcams are now commonly used devises.

Each local Digital Bureau can maintain its own 'grid' of 16 or 24 images of (what I call) 'location cams' from their particular neighborhood. These camera grid would be rotated during the day, with sunrise and fish market cams starting off the day, which would then be switched to rush-hour cams of traffic patterns and then during lunch the cams would be focused on local eateries and the lunch-hour crowd.

Afternoon the cams can get switched to kids playing in school yards or parks and then as night approached the cams would be switched to sunset cams. Later on night clubs and the street scene around clubs would be displayed on the cams.



Clicking on a particular cam would send the citizen to a location page dedicated to the intersection where that cam resides. Local restaurants, related cams, geographic milestones, and available services would be combined with 'who lives nearby' and citizen contributions – about that intersection of their city.

A serve full of these location pages would be part of the Digital Cities' software infrastructure.

Federated IDs – shared social graphs

A true Digital City would ***federate*** its citizenry's on-line accounts at local banks, health systems, local merchants and government – together into one comprehensive Digital City ID system.

Each citizen would have their own unique combination of services, content and friends – and the Digital City ID system would facilitate a smooth on-line experience between the various on-line offerings each entity offers.

This idealistic design and architecture could be seen as a litmus and underlying goal – for Digital Cities of the future.

Hyper-local Business directory

Another kind of software infrastructure a Digital City should offer is a multimedia business directory, not just of the local merchants and 'bricks and mortar' companies, but also of all of the part-time, independent contractors and virtual companies in the local community.

Our sales people would fan out around the community and work with these businesses to get them hooked up with our multimedia production teams. These teams would meet with each business and identify it's products or services they wish to highlight and interview and edit videos of success stories, examples of the businesses work and record testimonials from happy customers. These mini-TV commercials would then be added to the local community's on-line business directory.

This is another kind of software infrastructure which could be shared with both local startups and service bureaus, as well as national large scale software platforms (like Yahoo, Microsoft, Facebook or Google.)

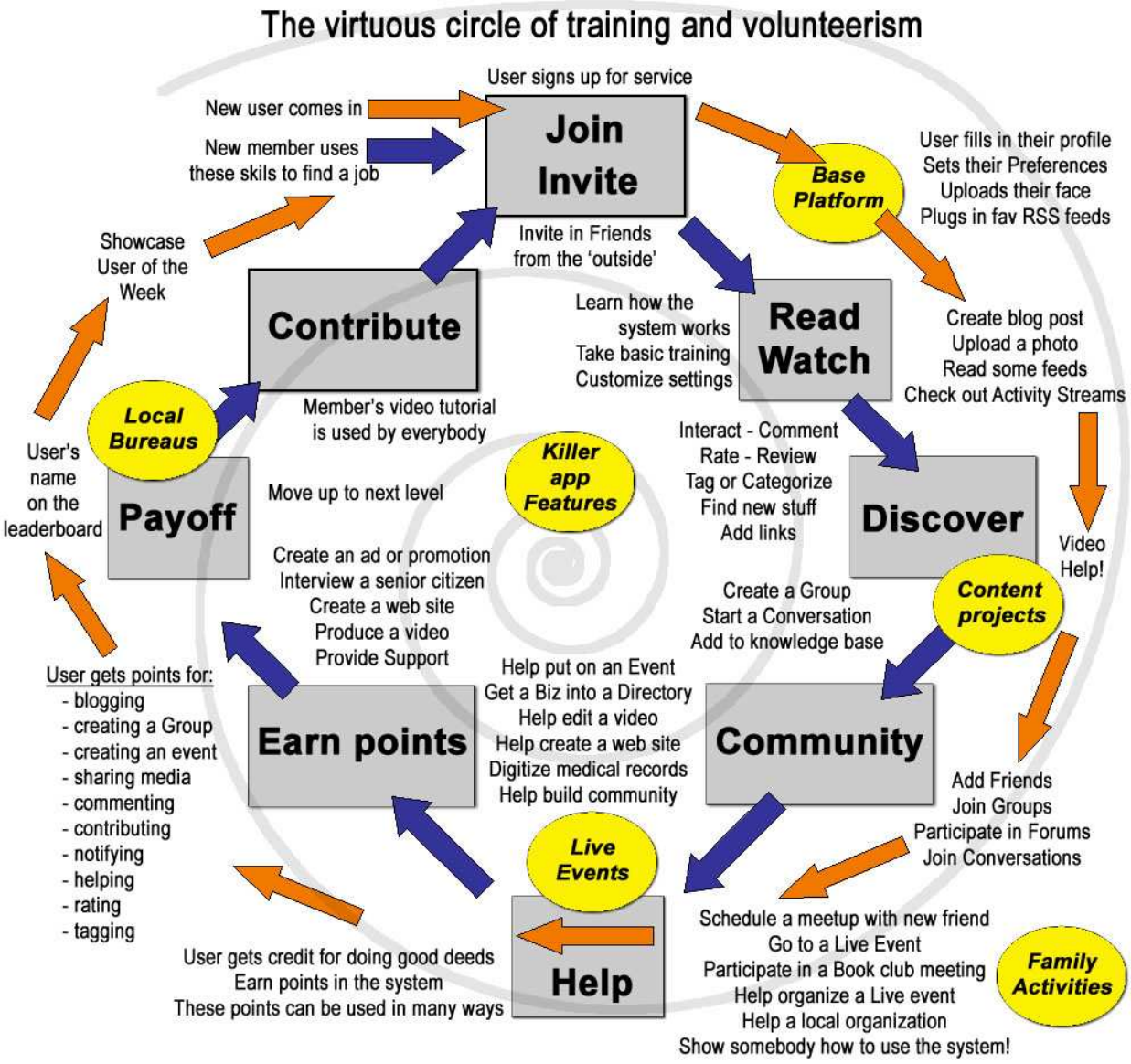
Shared data repositories – re-usable assets

All digital citizens will need LOTS of on-line storage to store their digital lifestyles. Most of these repositories will be offered by behemoths cloud services (Google, Amazon, Rackspace, IBM, etc.), but it is certainly possible that Digital Citizens will choose to store their digital content on local cloud services – as a form of local boosterism and support of local vendors.

Open data servers filled with reusable multimedia assets would also be part of our shared software infrastructure.

Virtuous Circle of Training and Volunteerism

The Digital City project plans on setting up Digital Bureaus which will offer a training process to citizens whom wish to become Digital Citizens.



This process is based upon the concept of a 'virtuous circle' that moves trainees through a series of tasks, difficulty levels and job skills, while rewarding trainees with points and encouraging them to interact and engage with their fellow trainees and local community members.

The virtuous circle dashboard provides access to one's training curriculum, Facebook and YouTube connectivity, blogging, media sharing, activity streams, groups and profile pages to all Digital Citizens.

The trainees themselves become the volunteers as they move their way thru this virtuous circle training methodology. Taking people off the street and putting them through a basic vetting and educational process is how we identify which Digital Citizens can attain internships and ultimately get Digital Jobs.