

LA VILLE NUMÉRIQUE : UNE ORIENTATION VERS UNE STANDARDISATION DES MÉTROPOLES ?

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Introduction

Pour répondre aux enjeux de la ville de demain, la ville numérique semble être au cœur des préoccupations et des orientations des métropoles. Dans le cadre de ce dossier, nous nous allons nous attarder sur ce sujet suivant :

La ville numérique : une orientation vers une standardisation des métropoles ?

Avant de rentrer au cœur de ce sujet, il nous semble pertinent de définir les grands concepts de cette question. Tout d'abord, la ville numérique correspond en anglais à la *smart city*, qui renvoie, dans un premier temps, à la notion de ville intelligente. En France, il s'agit essentiellement d'une ville dans laquelle l'usage des nouvelles technologies de l'information et de la communication (NTIC) est au cœur de la création de nouvelles expériences de vie urbaine. Ces aspects de la ville numérique se retrouvent autant dans la dimension substantielle que procédurale de la ville. Cela renvoie respectivement à l'aspect matériel de la ville (concret) et immatériel (jeux d'acteurs, mise en place des projets). En somme, la ville numérique donne naissance à de nouvelles manières de penser et de faire la ville. Elle permet à la fois de construire la ville de demain tout en élaborant de nouveaux processus de la fabrique urbaine **c'est en soit, son effet perversif**.

De nouveaux acteurs, notamment privés, ont été identifiés dans les projets urbains. Il s'agit d'une extension du modèle capitaliste qui consiste, à travers ses pratiques, à un repositionnement des acteurs publics ainsi qu'à une remise en question de leur légitimité. Ce phénomène concerne essentiellement les métropoles. Le processus de métropolisation constitue en effet le pendant urbain de la globalisation : certains espaces urbains dominent la hiérarchie urbaine mondiale grâce à leur forte capacité de polarisation des flux et des fonctions économiques et/ou politiques. Lorsque nous évoquons ces définitions nous pensons à Paris, New-York, Londres, Hong-Kong... En somme, des villes misant sur l'innovation et la créativité pour promouvoir leur territoire et qui font donc appel à ce que David Harvey appelle le *city branding*, traduction du marketing territorial. La transition vers le numérique semble être à l'œuvre pour maintenir ou engager un processus de métropolisation. La ville numérique semble être une fin en soi. De nouvelles compétences et de nouveaux modes de faire sont nécessaires à l'adaptation des villes au numérique. Notre sujet ne serait-il donc pas plutôt un questionnement autour des processus qui font que les villes deviennent créatives ? En effet, la standardisation correspond au processus de « normalisation, modélisation et d'une production destinée à une fabrication en série, une préfabrication en vue d'assemblages, une démultiplication ou une utilisation systématiques », (FNCAUE) comme dans le cadre de la production industrielle. Nous pouvons donc nous poser la question suivante :

Dans le cadre de la métropolisation, la ville numérique génère-t-elle des standards, un modèle préconçu, duplicable à tous les contextes territoriaux ?

Différents exemples nous montrent cet impact du numérique dans les pratiques urbaines ou architecturales avec par exemple la place de l'architecture internationale, les starchitectes faisant appel à l'architecture paramétrique à l'image de Franck Gehry ou de Zaha Hadid. Ces dimensions nous amènent à considérer la place des acteurs privés dans la fabrique de la ville, qui constitue aussi bien une collaboration qu'en opposition au secteur public. Ainsi, les métropoles s'orientent vers la ville numérique, soit par une démarche volontariste, soit dans la contrainte. Afin d'éclairer ce sujet, nous allons présenter deux textes : le premier texte renvoie aux différentes figures-types de la ville numérique, écrit par Nicolas Douay, et le deuxième, écrit par Richard Florida, expose l'émergence d'une classe créative. Nous présenterons aussi trois références de projet.

Références de projet

Nicolas Douay - « *L'urbanisme à l'heure du numérique* »

Comme premier texte, nous avons choisi de travailler sur le livre de Nicolas Douay « l'urbanisme à l'heure du numérique », dans un souci de compréhension nous avons réussi à trouver un article résumant ce dernier. Nicolas Douay met en avant 4 figures-types de la ville numérique permettant de positionner 4 manières de pratiquer l'urbanisme numérique. Ce qui est intéressant dans ce texte est la diversité des pratiques auxquelles il renvoie, que ce soit du point de vue de la planification, que de l'acteur dominant ou encore de la place de l'urbaniste. Cet article nous permet ainsi de rendre compte des moyens auxquels peut faire appel la ville numérique : il ne s'agit pas seulement de l'introduction des technologies de l'information et de la communication dans l'urbain mais également de l'utilisation de plateformes plus ou moins fermées pour recueillir des données, améliorer la gestion de la ville ou construire durablement. Finalement, les objectifs et les méthodes divergent, amenant à différentes manières de percevoir et de concevoir la ville. numérique, dans une logique d'adaptation à chaque contexte territorial.

L'URBANISME À L'HEURE DU NUMÉRIQUE

L'auteur identifie quatre façons différentes selon lesquelles le numérique est en train de bouleverser totalement la pratique urbanistique. Décryptage de ces dynamiques, souvent plus complémentaires que contradictoires, à l'œuvre aujourd'hui dans les grandes villes.

Nicolas Douay¹, maître de conférences en aménagement-urbanisme à l'université Paris 7

Les mutations technologiques ont souvent produit des changements sociaux importants, qui se traduisent dans l'espace et la pratique de l'aménagement. Alors que la ville intelligente fait partie des concepts incontournables, voire dominants, les usages du numérique peuvent influencer l'urbanisme selon quatre directions différentes. Ces scénarios sont représentés par une boussole, composée d'un axe horizontal opposant acteurs institutionnels et non-institutionnels, et d'un second axe, avec l'opposition entre ouverture et fermeture.

SCÉNARIO 1 : UN URBANISME ALGORITHMIQUE OU LE RETOUR DES EXPERTS

La première direction possible repose sur la croyance dans la technique et les données, dans la tradition de la cybernétique inventée à la fin des années quarante. La ville intelligente repose, aujourd'hui, sur un accès à des données supplémentaires, dont le traitement est rendu plus rapide par le numérique, offrant de nouvelles ressources pour l'aménagement. Les acteurs privés participent à la circulation de ces modèles. C'est déjà le cas du groupe IBM et du

centre d'opérations de Rio de Janeiro. Ce dernier collecte des données auprès d'une trentaine d'agences et de services municipaux, les stocke et les traite grâce à de puissants algorithmes, qui vont permettre de modéliser ces données. L'objectif est de mieux gérer la mobilité et les flux d'énergie dans l'espoir de bâtir une ville plus durable. La crainte est qu'IBM, qui fournit les algorithmes, participe à un contrôle généralisé de la population sans se préoccuper de l'intérêt des citoyens ou des grands enjeux urbains, en particulier la question de la qualité et de l'accessibilité sociale des infrastructures. En outre, le centre de Rio participe à une dépolitisation des politiques urbaines : la réponse aux enjeux publics amène à la formulation de réponses techniques sans mise en débat des solutions, ce qui laisse craindre une dépossession de la production urbaine au détriment des citoyens. Dans ce scénario, la numérisation des méthodes d'aménagement correspond au retour d'un urbanisme d'expertise, avec la domination d'acteurs techniques du secteur privé dans la production urbaine. Cela donnerait une nouvelle jeunesse à une approche rationnelle, qui apparaîtrait maintenant sous les traits d'un urbanisme durable.

SCÉNARIO 2 : UN URBANISME UBÉRISÉ SOUS LA PRESSION D'UNE EXTENSION DU DOMAINE DU CAPITALISME URBAIN

La deuxième direction possible renvoie à l'économie digitale – un vaste marché pour les grands groupes de services urbains – mais aussi à l'émergence de nouveaux acteurs. Concrètement, le privé devient plus présent dans l'espace urbain et fait évoluer la définition traditionnelle des services publics, avec les services de mobilités partagées comme Vélip' ou Auto-lib' à Paris, ou les bornes de connexion LINK à New York. Quelques start-up procèdent aussi à une disruption (rupture), à l'image des chauffeurs Uber ou des logements Airbnb. Sur cette

dernière plateforme, Paris est la première destination, avec près de 50 000 logements (contre 80 000 chambres d'hôtel). Les locations ne sont pas toujours occasionnelles et le nombre de logements retirés du marché de la location est estimé à plus de 20 000. Cela participe à l'augmentation des prix immobiliers, qui alimente le processus de gentrification. Face à cette récupération marchande de l'économie du partage, la municipalité tente d'encadrer les locations

en limitant la durée à 120 jours, en obligeant le versement de la taxe de séjour et en demandant l'enregistrement du logement.

Ainsi, le numérique fait

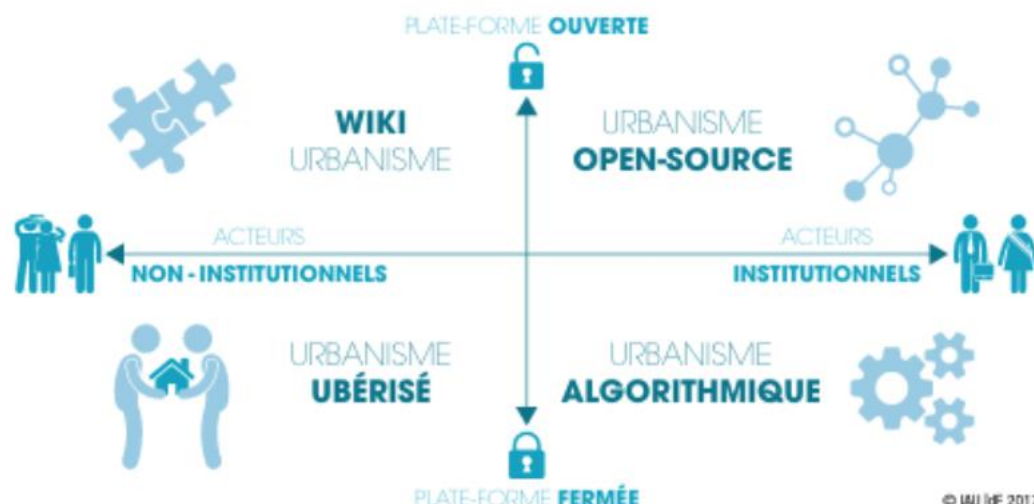
apparaître de nouveaux acteurs dans la production urbaine, qui viennent remettre en cause la légitimité et la capacité d'action des acteurs institutionnels. Il s'agit d'une poursuite de la privatisation de la ville que l'on peut rapprocher de l'approche stratégique de l'aménagement avec des acteurs privés, dont l'influence augmente en doublant les acteurs publics.

SCÉNARIO 3 : UN WIKI-URBANISME À LA RECHERCHE D'UNE VILLE ALTERNATIVE

La troisième direction correspond aussi à un contournement des acteurs publics, mais par la société civile. En effet, en suivant l'esprit des créateurs du réseau internet, des citoyens plus ou moins organisés, mais agissant toujours en réseau, s'emparent des questions urbaines. Ces « hackers » ou « codeurs » civiques participent au mouvement des « civic tech » en développant des dispositifs socio-techniques au service d'un renouveau démocratique. Ce wiki-urbanisme correspond à différents registres d'action, allant de la contestation, avec des sites de pétition en ligne (par exemple à Marseille, en 2013, une pétition a permis le retrait du projet de casino, à des formes plus élaborées de contribution et de délibération. Bien souvent, la cartographie sert de base à ces échanges, comme pour Carticipe, qui propose de localiser de nouvelles idées, de les commenter et de voter.

LA CARTOGRAPHIE SERT DE BASE AUX NOUVEAUX ÉCHANGES DÉMOCRATIQUES

LA BOUSSE DE L'URBANISME NUMÉRIQUE



Dans ce cas, les acteurs de la société civile participent à la même dynamique que les acteurs privés du numérique, en remettant en cause la légitimité et la capacité d'action des acteurs publics à faire la ville en les contournant. Cette dynamique n'est pas nouvelle, il s'agit de l'influence des mouvements sociaux, qui s'appuient maintenant sur le numérique et viennent ainsi renforcer l'approche communicationnelle de l'aménagement. De même que l'urbanisme ubérisé, le wiki-urbanisme constitue une remise en cause des acteurs publics.

SCÉNARIO 4 : UN URBANISME OPEN-SOURCE PAR LE RENOUVEAU DES PRATIQUES DES INSTITUTIONS DE L'AMÉNAGEMENT

Enfin, la quatrième possibilité s'appuie sur les institutions. Pour elle, la numérisation renvoie à la circulation et l'ouverture des données publiques (open data) et aux nouvelles ressources offertes par la technologie pour mettre en dialogue les acteurs de la ville, avec une évolution des instruments de la participation. Ces dispositifs socio-techniques peuvent prendre différentes formes en fonction de la nature des objets discutés, de leurs spatialisations et des degrés d'ouverture de la décision. À Paris,

la numérisation a débuté avec la carte participative « Imaginons Paris » lors de la révision du PLU, avec 22 838 visites et 2 268 contributions. Ensuite, le budget participatif a rassemblé 5 115 idées en 2015 et 3 358 en 2016. Pour cette dernière année, 92 809 votes ont permis de répartir les 219 projets lauréats, qui bénéficient de 94 millions d'euros de budget. La participation change donc de nature en devenant moins conflictuelle et plus balisée. Le pouvoir décisionnel citoyen est plus important, même si la dimension de délibération collective est peu présente car les processus sont largement encadrés politiquement et administrativement. Par ailleurs, le nombre de citoyens mobilisés est plus large, mais il n'est pas certain que cela réponde à l'enjeu de diversification des publics. Le numérique vient ainsi donner des ressources supplémentaires pour rendre plus tangible le tournant collaboratif dans l'urbanisme. Celui-ci a pour objectif de parvenir à des consensus par l'intermédiaire d'une interaction réussie entre un grand nombre d'acteurs. Dans ce sens, les technologies numériques offrent de nouvelles possibilités pour rendre ce tournant plus effectif et réduire le décalage entre théories et pratiques.

DES CONFIGURATIONS LOCALES FORCÉMENT HYBRIDES ET INÉDITES

Ces quatre directions qu'emprunte l'urbanisme numérisé sont davantage complémentaires que contradictoires. Localement, l'une ne va pas éclipser toutes les autres. Ainsi, dans la plupart des villes, il est possible de repérer des interactions dans des configurations locales forcément inédites et hybrides. Elles mettent en avant différentes catégories d'acteurs (techniques, privés, citoyens et institutionnels), qui illustrent la diversité des effets du numérique.

À Paris, on retrouve ainsi l'usage du big data pour les grands opérateurs de services urbains, les enjeux de régulation des plateformes comme Uber ou Airbnb, les mobilisations citoyennes en

ligne contre des grands projets dits « inutiles » et le développement de plateformes participatives.

L'avenir dira si la numérisation progressive des villes sera à la hauteur des promesses, mais nous pouvons déjà faire l'hypothèse qu'il s'agira d'un élément central de l'évolution de la pratique de l'urbanisme. ■

Nicolas Douay est également chercheur à l'unité mixte de recherche Géographie cités (équipe CRIA).

1. Ce texte est une synthèse de *Planifier à l'heure du numérique*, N. Douay, thèse d'habilitation à diriger des recherches, Université Paris-Sorbonne, 2016.

Richard Florida, « The rise of the creative class »

Cet article de Richard Florida traite de la classe créative. Selon lui, c'est une classe nouvelle de travailleurs très qualifiés, employés dans les domaines scientifique, culturel, des hautes technologies : les « créatifs ». C'est une population supposée très mobile, dont les stratégies de localisation sont guidées par la recherche d'aménités urbaines. Il s'agit du type de travailleurs les plus recherchés par les entreprises, qui produisent la plus grande plus-value. La capacité d'une ville à attirer cette classe sociale conditionne son intégration à la nouvelle économie - donc, à amorcer un processus de métropolisation.

Leur attraction dépend de multiples facteurs, comme une atmosphère accueillante - le principe des plug-and-play communities, où il est facile de s'installer et d'entreprendre -, ou la présence d'espaces publics agréables, d'un centre urbain en renouvellement et d'un secteur des hautes technologies important. Une standardisation des aménités offertes par les villes est ainsi à l'œuvre. Les villes qui ne parviennent pas à attirer ces classes créatives sont celles qui n'ont pas su s'adapter. La ville créative, numérique, induit en effet des adaptations dans les pratiques urbaines. Il s'agit d'un changement de contexte culturel.

The Rise of the Creative Class

Why cities without gays and rock bands are losing the economic development race.

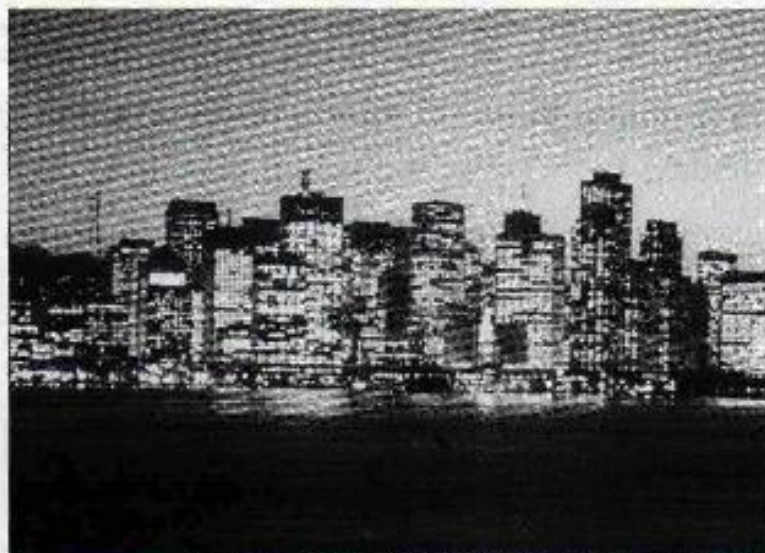
BY RICHARD FLORIDA

AS I WALKED ACROSS THE CAMPUS OF Pittsburgh's Carnegie Mellon University one delightful spring day, I came upon a table filled with young people chatting and enjoying the spectacular weather. Several had identical blue T-shirts with "Trilogy@CMU" written across them—Trilogy being an Austin, Texas-based software company with a reputation for recruiting our top students. I walked over to the table. "Are you guys here to recruit?" I asked. "No, absolutely not," they replied adamantly. "We're not recruiters. We're just hangin' out, playing a little Frisbee with our friends." How interesting, I thought. They've come to campus on a workday, all the way from Austin, just to hang out with some new friends.

I noticed one member of

the group sitting slouched over on the grass, dressed in a tank top. This young man had spiked multi-colored hair, full-body tattoos, and multiple piercings in his ears. An obvious slacker, I thought, probably in a band. "So what is your story?" I asked. "Hey man, I just signed on with these guys." In fact, as I would later learn, he was a gifted student who had inked the highest-paying deal of any graduating student in the history of his department, right at that table on the grass, with the recruiters who do not "recruit."

What a change from my own college days, just a



San Francisco boasts the highest "Creativity Index" ranking of any U.S. city.

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little more than 20 years ago, when students would put on their dressiest clothes and carefully hide any counterculture tendencies to prove that they could fit in with the company. Today, apparently, it's the company trying to fit in with the students. In fact, Trilogy had wined and dined him over margarita parties in Pittsburgh and flown him to Austin for private parties in hip nightspots and aboard company boats. When I called the people who had recruited him to ask why, they answered, "That's easy. We wanted him because he's a rock star."

While I was interested in the change in corporate recruiting strategy, something even bigger struck me. Here was another example of a talented young person leaving Pittsburgh. Clearly, my adopted hometown has a huge number of assets. Carnegie Mellon is one of the world's leading centers for research in information technology. The University of Pittsburgh, right down the street from our campus, has a world-class medical center. Pittsburgh attracts hundreds of millions of dollars per year in university research funding and is the sixth-largest center for college and university students on a per capita basis in the country. Moreover, this is hardly a cultural backwater. The city is home to three major sports franchises, renowned museums and cultural venues, a spectacular network of urban parks, fantastic industrial-age architecture, and great urban neighborhoods with an abundance of charming yet affordable housing. It is a friendly city, defined by strong communities and a strong sense of pride. In the 1986 Rand McNally survey, Pittsburgh was ranked "America's Most Livable City," and has continued to score high on such lists ever since.

Yet Pittsburgh's economy continues to putter along in a middling flat-line pattern. Both the core city and the surrounding metropolitan area lost population in the 2000 census. And those bright young university people keep leaving. Most of Carnegie Mellon's prominent alumni of recent years—like Vinod Khosla, perhaps the best known of Silicon Valley's venture capitalists, and Rick Rashid, head of research and development at Microsoft—went elsewhere to make their marks. Pitt's vaunted medical center, where Jonas Salk created his polio vaccine and the world's premier organ-transplant program was started, has inspired only a handful of entrepreneurs to build biotech companies in Pittsburgh.

Over the years, I have seen the community try just about everything possible to remake itself so as to attract and retain talented young people, and I was personally involved in many of these efforts. Pittsburgh has launched a multitude of programs to diversify the region's economy away from heavy industry into high technology. It has rebuilt its downtown virtually from scratch, invested in a new airport, and developed a massive new sports complex for the Pirates and the Steelers. But nothing, it seemed, could stem the tide of people and new companies leaving the region.

I asked the young man with the spiked hair why he was going to a smaller city in the middle of Texas, a place with a small airport and no professional sports teams, without a major symphony, ballet, opera, or art museum comparable to Pittsburgh's. The company is excellent, he told me. There are also terrific people and the work is challenging. But the clincher, he said, is that, "It's in Austin." There

The Creativity Index

The key to economic growth lies not just in the ability to attract the creative class, but to translate that underlying advantage into creative economic outcomes in the form of new ideas, new high-tech businesses and regional growth. To better gauge these capabilities, I developed a new measure called the Creativity Index (column 1). The Creativity Index is a mix of four equally weighted factors: the creative class

share of the workforce (column 2 shows the percentage; column 3 ranks cities accordingly); high-tech industry, using the Milken Institute's widely accepted Tech Pole Index, which I refer to as the High-Tech Index (column 4); innovation, measured as patents per capita (column 5); and diversity, measured by the Gay Index, a reasonable proxy for an area's openness to different kinds of people and ideas (column 6). This composite indicator is a better measure of a region's underlying creative capabilities than the simple measure of the creative class, because it reflects the joint

effects of its concentration and of innovative economic outcomes. The Creativity Index is thus my baseline indicator of a region's overall standing in the creative economy and I offer it as a barometer of a region's longer run economic potential. The following tables present my creativity index ranking for the top 10 and bottom 10 metropolitan areas, grouped into three size categories (large, medium-sized and small cities/regions). For a full listing of all U.S. metropolitan areas, visit www.washingtonmonthly.com.

—Richard Florida

are lots of young people, he went on to explain, and a tremendous amount to do: a thriving music scene, ethnic and cultural diversity, fabulous outdoor recreation, and great nightlife. Though he had several good job offers from Pittsburgh high-tech firms and knew the city well, he said he felt the city lacked the lifestyle options, cultural diversity, and tolerant attitude that would make it attractive to him. As he summed it up: "How would I fit in here?"

This young man and his lifestyle proclivities represent a profound new force in the economy and life of America. He is a member of what I call the creative class: a fast-growing, highly educated, and well-paid segment of the workforce on whose efforts corporate profits and economic growth increasingly depend. Members of the creative class do a wide variety of work in a wide variety of industries—from technology to entertainment, journalism to

finance, high-end manufacturing to the arts. They do not consciously think of themselves as a class. Yet they share a common ethos that values creativity, individuality, difference, and merit.

More and more businesses understand that ethos and are making the adaptations necessary to attract and retain creative class employees—everything from relaxed dress codes, flexible schedules, and new work rules in the office to hiring recruiters who throw Frisbees. Most civic leaders, however, have failed to understand that what is true for corporations is also true for cities and regions: Places that succeed in attracting and retaining creative class people prosper; those that fail don't.

Stuck in old paradigms of economic development, cities like Buffalo, New Orleans, and Louisville struggled in the 1980s and 1990s to become the next "Silicon Somewhere" by building generic high-tech

Large Cities Creativity Rankings

Rankings of 49 metro areas reporting populations over 1 million in the 2000 Census



The Top Ten Cities	Creativity Index	% Creative Workers	Creative Rank	High-Tech Rank	Innovation Rank	Diversity Rank
1. San Francisco	1057	34.8%	5	1	2	1
2. Austin	1028	36.4%	4	11	3	16
3. San Diego	1015	32.1%	15	12	7	3
3. Boston	1015	38.0%	3	2	6	22
5. Seattle	1008	32.7%	9	3	12	8
6. Raleigh—Durham—Chapel Hill	996	38.2%	2	14	4	28
7. Houston	980	32.5%	10	16	16	10
8. Washington—Baltimore	964	38.4%	1	5	30	12
9. New York	962	32.3%	12	13	24	14
10. Dallas	960	30.2%	23	6	17	9
10. Minneapolis	960	33.9%	7	21	5	29
The Bottom Ten Cities	Creativity Index	% Creative Workers	Creative Rank	High-Tech Rank	Innovation Rank	Diversity Rank
49. Memphis	530	24.8%	47	48	42	41
48. Norfolk—Virginia Beach, VA	555	28.4%	36	35	49	47
47. Las Vegas	561	18.5%	49	42	47	5
46. Buffalo	609	28.9%	33	40	27	49
45. Louisville	622	26.5%	46	46	39	36
44. Grand Rapids, MI	639	24.3%	48	43	23	38
43. Oklahoma City	668	29.4%	29	41	43	39
42. New Orleans	668	27.5%	42	45	48	13
41. Greensboro—Winston-Salem	697	27.3%	44	33	35	35
40. Providence, RI	698	27.6%	41	44	34	33

office parks or subsidizing professional sports teams. Yet they lost members of the creative class, and their economic dynamism, to places like Austin, Boston, Washington, D.C., and Seattle—places more tolerant, diverse, and open to creativity. Because of this migration of the creative class, a new social and economic geography is emerging in America, one that does not correspond to old categories like East Coast versus West Coast or Sunbelt versus Frostbelt.

The plug-and-play community is one that somebody can move into and put together a life—or at least a facsimile of a life—in a week.

Rather, it is more like the class divisions that have increasingly separated Americans by income and neighborhood, extended into the realm of city and region.

The Creative Secretary

The distinguishing characteristic of the creative class is that its members engage in work whose function is to “create meaningful new forms.” The super-creative core of this new class includes scientists and engineers, university professors, poets and novelists, artists, entertainers, actors, designers, and architects, as well as the “thought leadership” of modern society: nonfiction writers, editors, cultural figures, think-tank researchers, analysts, and other opinion-makers. Members of this super-creative core produce new forms or designs that are readily transferable and broadly useful—such as designing a product that can be widely made, sold and used; coming up with a theorem or strategy that can be applied in many cases; or composing music that can be performed again and again.

Beyond this core group, the creative class also includes “creative professionals” who work in a wide range of knowledge-intensive industries such as high-tech sectors, financial services, the legal and healthcare professions, and business management. These people engage in creative problem-solving, drawing on complex bodies of knowledge to solve specific problems. Doing so typically requires a high degree of formal education and thus a high level of human capital. People who do this kind of work may sometimes come up with methods or products that turn out to be widely useful, but it’s not part

of the basic job description. What they are required to do regularly is think on their own. They apply or combine standard approaches in unique ways to fit the situation, exercise a great deal of judgment, perhaps try something radically new from time to time.

Much the same is true of the growing number of technicians and others who apply complex bodies of knowledge to working with physical materials. In fields such as medicine and scientific research,

technicians are taking on increased responsibility to interpret their work and make decisions, blurring the old distinction between

white-collar work (done by decisionmakers) and blue-collar work (done by those who follow orders). They acquire their own arcane bodies of knowledge and develop their own unique ways of doing the job. Another example is the secretary in today’s pared-down offices. In many cases this person not only takes on a host of tasks once performed by a large secretarial staff, but becomes a true office manager—channeling flows of information, devising and setting up new systems, often making key decisions on the fly. These people contribute more than intelligence or computer skills. They add creative value. Everywhere we look, creativity is increasingly valued. Firms and organizations value it for the results that it can produce and individuals value it as a route to self-expression and job satisfaction. Bottom line: As creativity becomes more valued, the creative class grows.

The creative class now includes some 38.3 million Americans, roughly 30 percent of the entire U.S. workforce—up from just 10 percent at the turn of the 20th century and less than 20 percent as recently as 1980. The creative class has considerable economic power. In 1999, the average salary for a member of the creative class was nearly \$50,000 (\$48,752), compared to roughly \$28,000 for a working-class member and \$22,000 for a service-class worker.

Not surprisingly, regions that have large numbers of creative class members are also some of the most affluent and growing.

The New Geography of Class

Different classes of people have long sorted themselves into neighborhoods within a city or

region. But now we find a large-scale re-sorting of people among cities and regions nationwide, with some regions becoming centers of the creative class while others are composed of larger shares of working-class or service-class people. To some extent this has always been true. For instance, there have always been artistic and cultural communities like Greenwich Village, college towns like Madison and Boulder, and manufacturing centers like Pittsburgh and Detroit. The news is that such sorting is becoming even more widespread and pronounced.

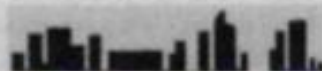
In the leading centers of this new class geography, the creative class makes up more than 35 percent of the workforce (see chart page 17). This is already the case in the greater Washington, D.C. region, the Raleigh-Durham area, Boston, and Austin—all areas undergoing tremendous econom-

ic growth. Despite their considerable advantages, large regions have not cornered the market as creative class locations. In fact, a number of smaller regions have some of the highest creative-class concentrations in the nation—notably college towns like East Lansing, Mich. and Madison, Wisc. (See chart page 21).

At the other end of the spectrum are regions that are being bypassed by the creative class. Among large regions, Las Vegas, Grand Rapids and Memphis harbor the smallest concentrations of the creative class. Members of this class have nearly abandoned a wide range of smaller regions in the outskirts of the South and Midwest. In small metropolitan areas like Victoria, Texas and Jackson, Tenn., the creative class comprises less than 15 percent of the workforce. The leading centers for the working class among large regions are Greensboro,

Medium-Size Cities Creativity Rankings

Rankings of 32 metro areas reporting populations 500,000 to 1 million in the 2000 Census



The Top Ten Cities	Creativity Index	% Creative Workers	Creative Rank	High-Tech Rank	Innovation Rank	Diversity Rank
1. Albuquerque, NM	965	32.2%	2	1	7	1
2. Albany, NY	932	33.7%	1	12	2	4
3. Tucson, AZ	853	28.4%	17	2	6	5
4. Allentown—Bethlehem, PA	801	28.7%	16	13	3	14
5. Dayton, OH	766	30.1%	8	8	5	24
6. Colorado Springs, CO	756	29.9%	10	5	1	30
7. Harrisburg, PA	751	29.8%	11	6	13	20
8. Little Rock, AR	740	30.8%	4	10	21	11
9. Birmingham, AL	722	30.7%	6	7	26	10
10. Tulsa, OK	721	28.7%	15	9	15	18
The Bottom Ten Cities	Creativity Index	% Creative Workers	Creative Rank	High-Tech Rank	Innovation Rank	Diversity Rank
32. Youngstown, OH	253	23.8%	32	32	24	32
31. Scranton—Wilkes-Barre, PA	400	24.7%	28	23	23	31
30. McAllen, TX	451	27.8%	18	31	32	9
29. Stockton—Lodi, CA	459	24.1%	30	29	28	7
28. El Paso, TX	464	27.0%	23	27	31	17
27. Fresno, CA	516	25.1%	27	24	30	2
26. Bakersfield, CA	531	27.8%	18	22	27	19
25. Fort Wayne, IN	569	25.4%	26	17	8	26
24. Springfield, MA	577	29.7%	13	30	20	22
23. Honolulu, HI	580	27.2%	21	14	29	6

N.C. and Memphis, Tenn., where the working class makes up more than 30 percent of the workforce. Several smaller regions in the South and Midwest are veritable working class enclaves with 40 to 50 percent or more of their workforce in the traditional industrial occupations.

These places have some of the most minuscule concentrations of the creative class in the nation. They are symptomatic of a general lack of overlap between the major creative-class centers and those of the working class. Of the 26 large cities where the working class comprises more than one-quarter of the population, only one, Houston, ranks among the top 10 destinations for the creative class.

Chicago, a bastion of working-class people that still ranks among the top 20 large creative centers, is interesting because it shows how the creative class and the traditional working class can coexist. But Chicago has an advantage in that it is a big city, with more than a million members of the creative class. The University of Chicago sociologist Terry Clark likes to say Chicago developed an innovative political and cultural solution to this issue. Under the second Mayor Daley, the city integrated the members of the creative class into the city's culture and politics by treating them essentially as just another "ethnic group" that needed sufficient space to express its identity.

Las Vegas has the highest concentration of the service class among large cities, 58 percent, while West Palm Beach, Orlando, and Miami also have around half. These regions rank near the bottom of the list for the creative class. The service class makes up more than half the workforce in nearly 50 small and medium-size regions across the country. Few of them boast any significant concentrations of the creative class, save vacationers, and offer little prospect for upward mobility. They include resort towns like Honolulu and Cape Cod. But they also include places like Shreveport, La. and Pittsfield, Mass. For these places that are not tourist destinations, the economic and social future is troubling to contemplate.

Plug-and-Play Communities

Why do some places become destinations for the creative while others don't? Economists speak of the importance of industries having "low entry barriers," so that new firms can easily enter and keep the industry vital. Similarly, I think it's important for a place to have low entry barriers for people—that is, to be a place where newcomers are accepted

quickly into all sorts of social and economic arrangements. All else being equal, they are likely to attract greater numbers of talented and creative people—the sort of people who power innovation and growth. Places that thrive in today's world tend to be plug-and-play communities where anyone can fit in quickly. These are places where people can find opportunity, build support structures, be themselves, and not get stuck in any one identity. The plug-and-play community is one that somebody can move into and put together a life—or at least a facsimile of a life—in a week.

Creative centers also tend to be places with thick labor markets that can fulfill the employment needs of members of the creative class, who, by and large, are not looking just for "a job" but for places that offer many employment opportunities.

Cities and regions that attract lots of creative talent are also those with greater diversity and higher levels of quality of place. That's because location choices of the creative class are based to a large degree on their lifestyle interests, and these go well beyond the standard "quality-of-life" amenities that most experts think are important.

For instance, in 1998, I met Gary Gates, then a doctoral student at Carnegie Mellon. While I had been studying the location choices of high-tech industries and talented people, Gates had been exploring the location patterns of gay people. My list of the country's high-tech hot spots looked an awful lot like his list of the places with highest concentrations of gay people. When we compared these two lists with more statistical rigor, his Gay Index turned out to correlate very strongly to my own measures of high-tech growth. Other measures I came up with, like the Bohemian Index—a measure of artists, writers, and performers—produced similar results.

Talented people seek an environment open to differences. Many highly creative people, regardless of ethnic background or sexual orientation, grew up feeling like outsiders, different in some way from most of their schoolmates. When they are sizing up a new company and community, acceptance of diversity and of gays in particular is a sign that reads "non-standard people welcome here."

The creative class people I study use the word "diversity" a lot, but not to press any political hot buttons. Diversity is simply something they value in all its manifestations. This is spoken of so often, and so matter-of-factly, that I take it to be a fundamental marker of creative class values. Creative-

minded people enjoy a mix of influences. They want to hear different kinds of music and try different kinds of food. They want to meet and socialize with people unlike themselves, trade views and spar over issues.

As with employers, visible diversity serves as a signal that a community embraces the open meritocratic values of the creative age. The people I talked to also desired nightlife with a wide mix of options. The most highly valued options were experiential ones—interesting music venues, neighborhood art galleries, performance spaces, and theaters. A vibrant, varied nightlife was viewed by many as another signal that a city “gets it,” even by those who infrequently partake in nightlife. More than anything, the creative class craves real experiences in the real world.

They favor active, participatory recreation over

passive, institutionalized forms. They prefer indigenous street-level culture—a teeming blend of cafes, sidewalk musicians, and small galleries and bistros, where it is hard to draw the line between performers and spectators. They crave stimulation, not escape. They want to pack their time full of dense, high-quality, multidimensional experiences. Seldom has one of my subjects expressed a desire to get away from it all. They want to get into it all, and do it with eyes wide open.

Creative class people value active outdoor recreation very highly. They are drawn to places and communities where many outdoor activities are prevalent—both because they enjoy these activities and because their presence is seen as a signal that the place is amenable to the broader creative lifestyle. The creative-class people in my studies are into a variety of active sports, from traditional ones like

Small-Size Cities Creativity Rankings

Rankings of 63 metro areas reporting populations 250,000 to 500,000 in the 2000 Census



The Top Ten Cities	Creativity Index	% Creative Workers	Creative Rank	High-Tech Rank	Innovation Rank	Diversity Rank
1. Madison, WI	925	32.8%	6	16	4	9
2. Des Moines, IA	862	32.1%	8	2	16	20
3. Santa Barbara, CA	856	28.3%	19	8	8	7
4. Melbourne, FL	855	35.5%	1	6	9	32
5. Boise City, ID	854	35.2%	3	1	1	46
6. Huntsville, AL	799	35.3%	2	5	18	40
7. Lansing—East Lansing, MI	739	34.3%	4	27	29	18
8. Binghamton, NY	731	30.8%	12	7	3	60
9. Lexington, KY	717	27.0%	28	24	10	12
10. New London, CT—Norwich, RI	715	28.1%	23	11	13	33

The Bottom Ten Cities	Creativity Index	% Creative Workers	Creative Rank	High-Tech Rank	Innovation Rank	Diversity Rank
63. Shreveport, LA	233	22.1%	55	32	59	57
62. Ocala, FL	263	16.4%	63	61	52	24
61. Visalia, CA	289	22.9%	52	63	60	11
60. Killeen, TX	302	24.6%	47	47	51	53
59. Fayetteville, NC	309	29.0%	16	62	62	49
58. York, PA	360	22.3%	54	54	26	52
57. Fayetteville, AR	366	21.1%	57	57	42	17
56. Beaumont, TX	372	27.8%	25	37	56	55
55. Lakeland—Winter Haven, FL	385	20.9%	59	56	53	5
54. Hickory, NC	393	19.4%	61	48	32	30

bicycling, jogging, and kayaking to newer, more extreme ones, like trail running and snowboarding.

Places are also valued for authenticity and uniqueness. Authenticity comes from several aspects of a community—historic buildings, established neighborhoods, a unique music scene, or specific cultural attributes. It comes from the mix—from urban grit alongside renovated buildings, from the commingling of young and old, long-time neighborhood characters and yuppies, fashion models and “bag ladies.” An authentic place also offers unique and original experiences. Thus a place full of chain stores, chain restaurants, and nightclubs is not

authentic. You could have the same experience anywhere.

Today, it seems, leading creative centers provide a solid mix of high-tech industry, plentiful outdoor amenities, and an older urban center whose rebirth has been fueled in part by a combination of creativity and innovative technology, as well as lifestyle amenities. These include places like the greater Boston area, which has the Route 128 suburban complex, Harvard and MIT, and several charming inner-city Boston neighborhoods. Seattle has suburban Bellevue and Redmond (where Microsoft is located), beautiful mountains and country, and a series of

revitalized urban neighborhoods. The San Francisco Bay area has everything from posh inner-city neighborhoods to ultra-hip districts like SoMa (South of Market) and lifestyle enclaves like Marin County as well as the Silicon Valley. Even Austin includes traditional high-tech developments to the north, lifestyle centers for cycling and outdoor activities, and a revitalizing university/ downtown community centered on vibrant Sixth Street, the warehouse district and the music scene—a critical element of a thriving creative center.

Institutional Sclerosis

Even as places like Austin and Seattle are thriving, much of the country is failing to adapt to the demands of the creative age. It is not that struggling cities like Pittsburgh do not want to grow or encourage high-tech industries. In most



San Francisco has everything from the gay-friendly Castro district to the ultra-hip SoMa region to Chinatown (shown here).

cases, their leaders are doing everything they think they can to spur innovation and high-tech growth. But most of the time, they are either unwilling or unable to do the things required to create an environment or habitat attractive to the creative class. They pay lip service to the need to "attract talent," but continue to pour resources into recruiting call centers, underwriting big-box retailers, subsidizing downtown malls, and squandering precious taxpayer dollars on extravagant stadium complexes. Or they try to create facsimiles of neighborhoods or retail districts, replacing the old and authentic with the new and generic—and in doing so drive the creative class away.

It is a telling commentary on our age that at a time when political will seems difficult to muster for virtually anything, city after city can generate the political capital to underwrite hundreds of millions of dollars of investments in professional sports stadiums. And you know what? They don't matter to the creative class. Not once during any of my focus groups and interviews did the members of the creative class mention professional sports as playing a role of any sort in their choice of where to live and work. What makes most cities unable to even imagine devoting those kinds of resources or political will to do the things that people say really matter to them?

The answer is simple. These cities are trapped by their past. Despite the lip service they might pay, they are unwilling or unable to do what it takes to attract the creative class. The late economist Mancur Olson long ago noted that the decline of nations and regions is a product of an organizational and cultural hardening of the arteries he called "institutional sclerosis." Places that grow up and prosper in one era, Olson argued, find it difficult and often times impossible to adopt new organizational and cultural patterns, regardless of how beneficial they might be. Consequently, innovation and growth shift to new places, which can adapt to and harness these shifts for their benefit. This phenomenon, he contends, is how England got trapped and how the U.S. became the world's great economic power. It also accounts for the shift in economic activity from the old industrial cities to newer cities in the South and West, according to Olson.

Olson's analysis presciently identifies why so many cities across the nation remain trapped in the culture and attitudes of the bygone organizational age, unable or unwilling to adapt to current trends. Cities like Detroit, Cleveland, and my current hometown of Pittsburgh were at the forefront of the organizational age. The cultural and attitudinal norms of that age became so powerfully ingrained in these places that they did not allow the new norms and attitudes associated with the creative age to grow up, diffuse and become generally accepted. This

The list of the country's high-tech hot spots looks an awful lot like the list of the places with highest concentrations of gay people.

process, in turn, stamped out much of the creative impulse, causing talented and creative people to seek out new places where they could more readily plug in and make a go of it.

Most experts and scholars have not even begun to think in terms of a creative community. Instead, they tend to try to emulate the Silicon Valley model which author Joel Kotkin has dubbed the "nerdistan." But the nerdistan is a limited economic development model, which misunderstands the role played by creativity in generating innovation and economic growth. Nerdistans are bland, uninteresting places with acre upon acre of identical office complexes, row after row of asphalt parking lots, freeways clogged with cars, cookie-cutter housing developments, and strip-malls sprawling in every direction. Many of these places have fallen victim to the very kinds of problems they were supposed to avoid. The comfort and security of places like Silicon Valley have gradually given way to sprawl, pollution, and paralyzing traffic jams. As one technology executive told *The Wall Street Journal*, "I really didn't want to live in San Jose. Every time I went up there, the concrete jungle got me down." His company eventually settled on a more urban Southern California location in downtown Pasadena close to the CalTech campus.

Kotkin finds that the lack of lifestyle amenities is causing significant problems in attracting top creative people to places like the North Carolina Research Triangle. He quotes a major real estate developer as saying, "Ask anyone where downtown is

and nobody can tell you. There's not much of a sense of place here. . . . The people I am selling space to are screaming about cultural issues." The Research Triangle lacks the hip urban lifestyle found in places like San Francisco, Seattle, New York, and Chicago, laments a University of North Carolina researcher: "In Raleigh-Durham, we can always visit the hog farms."

The Kids Are All Right

How do you build a truly creative community—one that can survive and prosper in this emerging age? The key can no longer be found in the usual strategies. Recruiting more companies won't do it; neither will trying to become the next Silicon Valley. While it certainly remains important to have a solid business climate, having an effective people climate is even more essential. By this I mean a general strategy aimed at attracting and retaining people—especially, but not limited to, creative people. This entails remaining open to diversity and actively working to cultivate it, and investing in the lifestyle amenities that people really want and use often, as opposed to using financial incentives to attract companies, build professional sports stadiums, or develop retail complexes.

The benefits of this kind of strategy are obvious. Whereas companies—or sports teams, for that matter—that get financial incentives can pull up and leave at virtually a moment's notice, investments in amenities like urban parks, for example, last for generations. Other amenities—like bike lanes or off-road trails for running, cycling, rollerblading, or just walking your dog—benefit a wide swath of the population.

There is no one-size-fits-all model for a successful people climate. The members of the creative class are diverse across the dimensions of age, ethnicity and race, marital status, and sexual preference. An effective people climate needs to emphasize openness and diversity, and to help reinforce low barriers to entry. Thus, it cannot be restrictive or monolithic.

Openness to immigration is particularly important for smaller cities and regions, while the ability to attract so-called bohemians is key for larger cities and regions. For cities and regions to attract these groups, they need to develop the kinds of people climates that appeal to them and meet their needs.

Yet if you ask most community leaders what kinds of people they'd most want to attract, they'd likely say successful married couples in their 30s

and 40s—people with good middle-to-upper-income jobs and stable family lives. I certainly think it is important for cities and communities to be good for children and families. But less than a quarter of all American households consist of traditional nuclear families, and focusing solely on their needs has been a losing strategy, one that neglects a critical engine of economic growth: young people.

Young workers have typically been thought of as transients who contribute little to a city's bottom line. But in the creative age, they matter for two reasons. First, they are workhorses. They are able to work longer and harder, and are more prone to take risks, precisely because they are young and childless. In rapidly changing industries, it's often the most recent graduates who have the most up-to-date skills. Second, people are staying single longer. The average age of marriage for both men and women has risen some five years over the past generation. College-educated people postpone marriage longer than the national averages. Among this group, one of the fastest growing categories is the never-been-married. To prosper in the creative age, regions have to offer a people climate that satisfies this group's social interests and lifestyle needs, as well as address those of other groups.

Furthermore, a climate oriented to young people is also attractive to the creative class more broadly. Creative-class people do not lose their lifestyle preferences as they age. They don't stop bicycling or running, for instance, just because they have children. When they put their children in child seats or jogging strollers, amenities like traffic-free bike paths become more important than ever. They also continue to value diversity and tolerance. The middle-aged and older people I speak with may no longer hang around in nightspots until 4 a.m., but they enjoy stimulating, dynamic places with high levels of cultural interplay. And if they have children, that's the kind of environment in which they want them to grow up.

My adopted hometown of Pittsburgh has been slow to realize this. City leaders continue to promote Pittsburgh as a place that is good for families, seemingly unaware of the demographic changes that have made young people, singles, new immigrants, and gays critical to the emerging social fabric. People in focus groups I have conducted feel that Pittsburgh is not open to minority groups, new immigrants, or gays. Young women feel there are substantial barriers to their advancement. Talented members of racial

and ethnic minorities, as well as professional women, express their desire to leave the city at a rate far greater than their white male counterparts. So do creative people from all walks of life.

Is there hope for Pittsburgh? Of course there is. First, although the region's economy is not dynamic, neither is it the basket case it could easily have become. Twenty years ago there were no significant venture capital firms in the area; now there are many, and thriving high-tech firms continue to form and make their mark. There are signs of life in the social and cultural milieu as well. The region's immigrant population has begun to tick upward, fed by students and professors at the universities and employees in the medical and technology sectors. Major suburbs to the east of the city now have Hindu temples and a growing Indian-American population. The area's gay community, while not large, has become more active and visible. Pittsburgh's increasing status in the gay world is reflected in the fact that it is the "location" for Showtime's "Queer as Folk" series.

Many of Pittsburgh's creative class have proven to be relentless cultural builders. The Andy Warhol Museum and the Mattress Factory, a museum/workspace devoted to large-scale installation art, have achieved worldwide recognition. Street-level culture has a growing foothold in Pittsburgh, too, as main street corridors in several older working-class districts have been transformed. Political leaders are in some cases open to new models of development. Pittsburgh mayor Tom Murphy has been an ardent promoter of biking and foot trails, among other things. The city's absolutely

first-rate architecture and urban design community has become much more vocal about the need to preserve historic buildings, invest in neighborhoods, and institute tough design standards. It would be very hard today (dare I say nearly impossible) to knock down historic buildings and dismember vibrant urban neighborhoods as was done in the past. As these new groups and efforts reach critical mass, the norms and attitudes that have long prevailed in the city are being challenged.

For what it's worth, I'll put my money—and a lot of my effort—into Pittsburgh's making it. If Pittsburgh, with all of its assets and its emerging human creativity, somehow can't make it in the creative age, I fear the future does not bode well for other older industrial communities and established cities, and the lamentable new class segregation among cities will continue to worsen. ●



Seattle has suburban Bellevue and Redmond, where Microsoft is based, as well revitalized inner-city neighborhoods.

Références de projets

Les stations de vélo en auto-partage et le retour en grâce du vélo

Les applications au cœur de la ville numérique, l'exemple des applications de vélo en auto-partage. Cette référence de projet nous permet de montrer que la ville numérique ce n'est pas seulement de construire des villes ou des bâtiments intelligents c'est également, élaborer des services apportant une plus-value pour ceux qui pratiquent la ville. Ici, l'application indigoweel permet l'utilisation temporaire de vélo qui est en auto partage dans les grandes métropoles françaises.



Source : les Echos

La « smart city » Kowloon East à Hong Kong.

L'idée de développement d'un quartier orienté vers la ville numérique vient en réponse à une demande de requalification urbaine à la suite de la désindustrialisation d'un espace urbain. Ce projet est le résultat de l'élaboration de 3 scénarios par la ville de Hong-Kong. Il s'agit du dernier, qui a été développé en 2017. Il s'inspire du processus d'urbanisme algorithmique c'est-à-dire qu'il met à contribution les grandes bases de données dans son déroulement. Néanmoins, ce projet qui se proclame « smart », possède de nombreuses limites, et notamment celle d'utiliser la dimension du numérique comme un élément de marketing territorial et de city branding.



Source : Pacific Rim construction

La Maison Rouge à Saint-Etienne

C'est une auberge de jeunesse construite dans le quartier du Crêt-de-Roc à Saint-Etienne, destinée à attirer de nouveaux urbains, propice aux nouveaux usages du numérique (espaces partagés, de coworking,

connexion au wifi gratuite). Ce quartier, après avoir connu un déclin et une paupérisation prononcés, fait l'objet d'un réinvestissement par la municipalité, dans une optique de renouvellement urbain. Il s'agit aussi pour les pouvoirs publics d'une tentative de gentrification par l'offre. Cet exemple illustre le potentiel d'exclusion social de la ville numérique, mondialisée, métropolisée, duale, dans laquelle certains types de population sont favorisés au détriment d'autres.



Source : La maison rouge – back packer hostel

Conclusion

Pour rappel, notre problématique de départ est la suivante :

Dans le cadre de la métropolisation, la ville numérique génère-t-elle des standards, un modèle préconçu, duplicable à tous les contextes territoriaux?

Au regard des recherches réalisées, nous pouvons dire que la ville numérique ne constitue pas seulement un processus de standardisation des métropoles. En effet, comme nous pouvons le lire dans le texte de Nicolas Douay, les appropriations des figures types et des moyens restent multiples.

De plus, la ville numérique semble être encore souvent au stade de l'expérimentation. La ville numérique peut se faire aussi bien dans le projet urbain neuf que dans le processus de renouvellement des espaces urbains existants. La numérisation est un processus qui intervient à différentes échelles : une ville créée ex nihilo, un quartier construit sur une friche, ou encore l'insertion des technologies dans l'espace urbain existant.

Les spécificités culturelles et politiques propres à chaque contexte nous amènent à nuancer l'idée selon laquelle le numérique constitue une forme de standardisation des métropoles.

Si le qualificatif de ville numérique se présente pour certaines métropoles comme un signe d'attractivité des territoires, nous pouvons nous poser la question suivante : est-ce la ville numérique qui fait la standardisation des villes ou bien, plus globalement, le processus de métropolisation en lui-même ?

Par ailleurs, la ville numérique tend vers la concentration d'un certain type de population, la classe créative. Cette situation entraîne une standardisation des espaces urbains, notamment des espaces publics, aménagés pour attirer et retenir cette catégorie de population. La concentration de ces travailleurs dans une ville entraîne un processus de gentrification. La ville numérique est-elle donc exclusive, c'est-à-dire à destination d'une partie « désirable » de la population ?

Afin d'avoir un retour sur ce travail, nous nous sommes posé la question de notre position sur ce sujet ainsi que de nos impressions vis-à-vis de ce dernier. Au-delà du processus de standardisation, le numérique participe d'une déshumanisation de la ville avec la place prédominante des algorithmes et des data dans ce processus, s'éloignant ainsi de la conception de l'humain comme vecteur de valeurs et d'avis.

Nous avons l'impression que la ville numérique et ces processus nous dépassent et questionnent la place de l'urbaniste et nos connaissances sur ce sujet. En effet, la ville numérique est souvent considérée comme un élément central pour le futur de la ville contemporaine, pour répondre à des enjeux de développement durable. Cependant, nous n'avons pas encore conscience du potentiel actuel et futur de la ville numérique. Nous voyons la transition vers la ville numérique comme l'introduction des outils du numérique dans nos vies – en tant que membres de la génération X -, comme quelque chose qui va se dérouler naturellement.

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