Rise of the Dual Platform Citizens

by

Michael Kim

A thesis
presented to the University Of Waterloo
in fulfillment of the
thesis requirement for the degree of
Master of Architecture

Waterloo, Ontario, Canada, 2016

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

THESIS ABSTRACT

The thesis research topic came from a simple question: what is the role of the architect in the future? As I watched the world become enchanted with making everything become "online," I wondered what all this meant for architecture, a design practice that has not yet embraced the digital realm as an architectural "place."

As digital identities became more sophisticated, the emergence of digital platform citizens began. A public digital entity or occupants of "place," the architectural practice can no longer ignore such a population that plays a key role in shaping today's cultural, economical and social trends. Therefore, **the architectural understanding of public realm must expand to include digital identities of its occupants, and the data each generate. This expansion would form a dual platform understanding in architecture - designing environments that engage and encompass both the digital and the physical realms.**

The call for dual platform understanding in architecture stems from a single phenomenon: the emergence of digital platform citizens. It is because of this that my thesis research begins with understanding what it means to be a citizen of the digital realm - forming a typology of citizens within the digital realm, their individual behaviours, responsibilities, and statuses are explored. In addition to understanding the individual, the nature of the population as a collective is compared to the traditional definition of what it means to be a public realm.

If digital platform citizens are to be considered as part of the public realm, how can the architectural practice accommodate and process them as occupants? I propose that each cloud of related data the digital platform citizen generates be identified as a layer (personal preferences, movement patterns, purchase behavior, etc.). As groupings of these layers thicken, they form the "digitalscape," a digital contextual understanding of space. The creation of digitalscapes in architecture offer powerful design tools for understanding context. But, how are the digital citizens and the data they generate harnessed and integrated into a physical environment? To answer this question, the digestive cycles of data and the transfer of data between physical and the digital realms are examined through case studies of contemporary architectural designs that integrate such techniques.

Each case study identifies different methods of including digital platform citizens in environmental design. These case

studies form the current state of understanding architecture as a dual platform design practice. But how can the idea be pushed further? What new benefits does dual platform understanding bring to the discourse of architectural design?

I believe dual platform understanding in design is more than just a style or fad, as it is the responsibility of the architect to be aware of the occupant and context in their design. If the definition of occupant and context is to evolve to encompass both digital and physical realms, so must the architectural practice embrace this evolution.

My thesis research is a call for action, for future architects to understand design as a dual platform practice. Contemporary architects must be sensitive to both the digital and the physical citizens that occupy their design, to fully harness and utilize what the digital realm offers for environmental design.

ACKNOWLEDGEMENTS

DEDICATION

My Parents . Michelle Park . Jinna Kim . Kin Leung . Nicolas Boutin . Zak Fish . Prianka Smita
Sarah Gunawan . Claire Lubell . Raymon Yim . Andrew Bang . Alan Park

I want to mention a special thank you for your all your support throughout my thesis. Without your support, there would be nothing but blank pages as you provided me with the inspiration, the stamina, and the purpose for creating this thesis. I'm grateful to all of you in going through this thesis journey with me - enduring all the trying times and the celebrations along the way.

This thesis is dedicated to you all.
Thank you.

TABLE OF CONTENTS

LIST OF FIGURES.

PHOTOGRAPH REFERENCES   **PG #**

Ema Peter. *Skies Painted with Unnumbered Sparks*. 2014. Thenextweb. accessed   108
October 20, 2015. thenextweb.com

Bret Hartman. *untitled*. 2014. Ted. accessed October 20, 2015. blog.ted.com   110

Spencer Lowell. *untitled*. 2007. accessed October 21, 2015. www.ecloudproject.   114
com

Dean McNamee. *untitled*. 2011. accessed October 21, 2015. www.deanmcnamee.   120
com/wikipedia-anniversary

Dean McNamee. *untitled*. 2011. accessed October 21, 2015. www.deanmcnamee.   122
com/wikipedia-anniversary

untitled. Future Cities Lab. 2015. accessed October 21, 2015. www.future-cities- 126
lab.net/data-lantern

untitled. Future Cities Lab. 2015. accessed October 21, 2015. www.future-cities- 128
lab.net/data-lantern

untitled. Local Projects. 2010. accessed October 21, 2015. localprojects.net/   138
project/gallery-one

untitled. Local Projects. 2010. accessed October 21, 2015. localprojects.net/   140
project/gallery-one

THE DIGITAL PLATFORM CITIZEN.

EMERGENCE OF DIGITAL PLATFORM CITIZENS

I am a child of a dual platform world, the generation that pioneered the notion of what it means to have a digital identity.

My personal journey began with online gaming and chatrooms that encouraged social interactions to occur digitally, separate from the "real world". It was a projection of myself, separate from who I was in the physical world - an alter ego that I was able to craft as I wished without any consequences to the *real* me. But as the "Web 2.0" online content started to emerge, there was a paradigm shift as to how online social behavior would be conducted. Through smart phones and online social platforms such as Facebook, Instagram, and Twitter, online social interaction rapidly began to tie into the physical world. There were dual benefits and consequences to the activities I engaged in the digital realm and the physical one.[1] My *real* friends became online friends, the events I hosted were advertised, criticized and photographed online for others to see. The anonymity of online identities faded, as I began to understand the benefits of connecting my online world to the physical one. As these services and platforms grew in popularity, the clearer my online identity became. My daily travel patterns of the places I've visited - purchases I've made and how I've felt about the product, even the food I ate - were all recorded and existed in the digital world to create my identity.

This personal experience is not an isolated event and most likely a similar version of the story can be heard from anyone who witnessed the paradigm shift from Web 1.0 to Web 2.0. Coined by Tim O'Reilly and Dale Dougherty, the term Web 2.0 describes online content that emphasizes user generated content, ease of usability or flexibility of materials, and interoperability.[2] In contrast, Web 1.0 describes the "old internet" that was passive and meant for reading more than participating. Data transfer in Web 1.0 was one dimensional - from the publishers of the web content to the readers. The term "users" does not apply here, as there were very limited methods of interacting with online content. O'Reilly contributes the transition from Web 1.0 to Web 2.0 to the burst of the dot-com bubble, stating: "with the burst of the dot-com bubble, companies that survived the collapse were focusing on key features that highlight the new Web 2.0 elements".
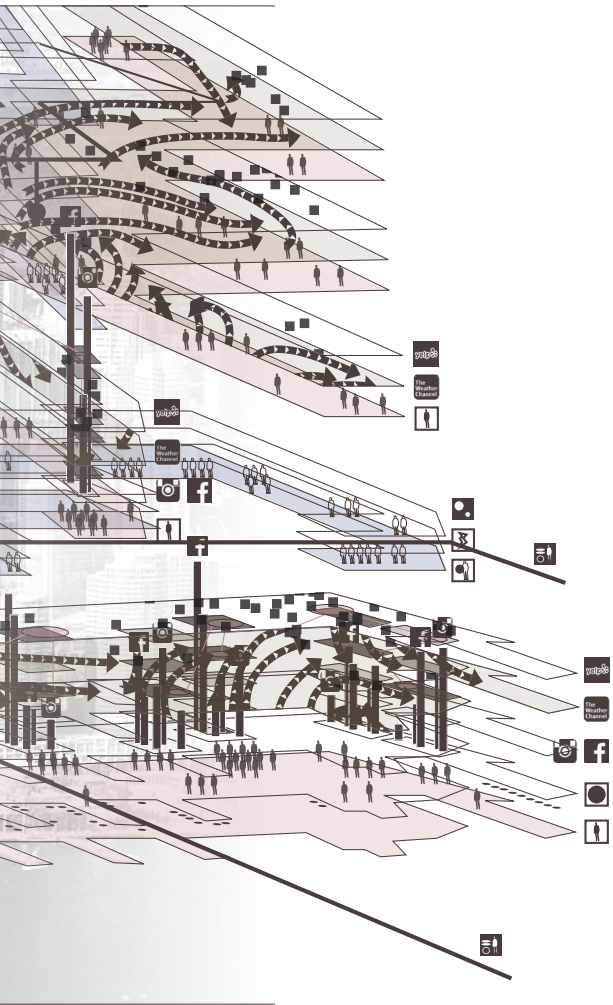
1 Kieron O'Hara, Mischa M. Tuffield, Nigel Shadbolt. "Lifelogging: Privacy and empowerment with memories for life". in Identity in the Information Society 2008, Volume 1, Issue 1, pp 155-172. accessed March 17, 2014. DOI: 10.1007/s12394-009-0008-4

2 Tim O'Reilly. "What is Web 2.0". *O'Reilly Network*. last modified September 30, 2005, http://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html

He believes that after the collapse, surviving web companies were able to reflect on what key features online were desired by their clients and thus, Web 2.0 was born. O'Reilly describes these key features to be:

1)   **Web as a platform not a product**
        -online content becomes a service rather than a product
        -design web content with architecture of participation
        -remixable data source and transformations

2)   **Harnessing collective intelligence**
        -enhance online functions through collective intelligence
        -investment on user's behavior observation
        -notion of "live web"

3)   **Data as a commodity**
        -no longer product license battles but data production and
         management that become valuable business assets
        -End of software release cycle
        -loose ended development of online content
        -users as co-developers
        -value of on-going project business model

5)   **Lightweight programming models**
        -simplicity to encourage "hacking" and flexibility to stay
         relevant to current trends
        -able to easily implement add-ons and mods

6)   **Software above the level of a single device**
        -not limited to PC platform

7)   **Richer user experiences**
        -introduction of AJAX web development techniques
         (Adobe Flash, Javascript, DOM scripting, etc.)
        -web applications are now just as complex as PC
         applications

Many of these key features of Web 2.0 pushed for a movement towards participatory and client oriented online content, strengthening the desire for online profile creation so that services can be tailored to the user. Therefore, creating a profile is often the first step into accessing or enhancing any Web 2.0 online service, whether it be to upload a homemade video or to subscribe to

news content. With the rapid successes of Web 2.0 services such as: YouTube, Wikipedia, Facebook and personal blogs, suddenly the digital world was exploding with online profiles all generating their own personal data. As Web 2.0 services increased their interoperability, data became easier to share and interact between multiple web applications, combining an individual's personal data across multiple platforms - forming their digital identity.

This identity eventually became a passport, a cloud of data that defines who I am in the digital world, today. I carry this with me wherever I go online. It is unforgiving in what it records, as all these social activities and behaviours leave permanent traces without any filters. It is through this online passport that digital platforms identify, cater, and change to suit my needs as an individual.

This cloud of data that follows me is a passport that identifies who I am as a digital platform citizen.

What does it mean to be a digital platform citizen? Just as there are legal statuses of persons in a citizenship, so are there hierarchies of citizenship in the digital realm. Each has its requirements for reaching a certain level of citizenship and the benefits or consequences that follow them. Predominantly determined by the level of responsibilities and participation the citizens contribute, the hierarchy in digital platform citizens acts as a tier system for understanding the different types of populous that utilize the digital platform.

The bottom end of the spectrum in a digital platform citizen begins with a person with no digital footprint. This is the population that currently do not exist in the digital world. There is no user history of past activities, and the user does not have any devices connected online, therefore eliminating the change of passive data retrieval from connected devices. The passport of their digital platform citizenship essentially does not exist. They neither benefit nor contribute from online activities.

NO DIGITAL FOOTPRINT

Having no digital footprint can mean one of two things, either the user does not have any online activity or the platform being used does not support any online activity. The level of commitment or contribution does not always solely depend on the sophistication of the platform and the amount of data collected. The success of digital platforms very much depends on the willingness to support and participate in the information sharing.

The browser is an infrequent user or a first time visitor to online content often leaving little traces of digital footprints. The participant only partakes in viewing the content and utilizes minor features that require minimal participation. The browser contributes limited data, and is not an accurate indicator of the online target audience. It is, however, important to keep track of their activities to encourage further involvement with online activities. The browsers are only there to benefit from the services offered and by the data created by others. They offer little to no contribution towards the service or platform provided.

THE BROWSER

To demonstrate the nature of digital platform citizens, my personal involvement with www.fountainpennetwork.com (FPN) will be used as a case study. The website is an online forum of fountain pen hobbyists. The website is a purely digital place for networking, information sharing and community building of people with a common interest.

Even an obscure and outdated hobby of collecting and using fountain pens have a place to flourish online. The website is a vast network of over 90, 000 members contributing information and material sharing of everything related to fountain pens. Locally, these members do not have the numbers or the infrastructure to form such a strong community, but being FPN[fig. 1] allows hobbyists around the world to connect and generate enough mass of collectors to form a community that thrives. The fountain pen network functions through membership structure - custom designed for the website - to reflect the member's interests and the website's ideals on how the community should be organized. Like many other localized or "mini" focus groups formed on the Internet, a hierarchy of members became necessary to facilitate the responsibilities and ethics of use within the digital platform. In a way, FPN although a digital world, has its own citizenship and rules as to how members are to behave within the digital platform.

The "browsers" of FPN are people who are curious about the site and its offerings. It is likely they sought out information on FPN themselves through search engines or linked through another post from a different site. These citizens have minor contribution, in that they may or may not create a profile, enabling them to further participate. Majority of these citizens refrain from participating and simply observe FPN activities or read the different posts made by other members, to learn more about fountain pens. Still, their presence becomes a contribution in FPN, as their behavior is tracked as "view counts." Although these view counts do not directly create content for the platform, they help facilitate or curate the content being posted. Depending on the number of view counts, posts and threads are "bumped" up on the website as hot topics to attract more activity about the particular content.[*fig.2] With such a system built into the platform, browsers are like anonymous voters, helping FPN decide which topics are currently popular and create more traffic. If browsers happen to grow their interest in further participating in the networks they must create a profile. In doing this, they make an agreement to the platform's policies and rules of conduct to become a citizen and contributing member of FPN.
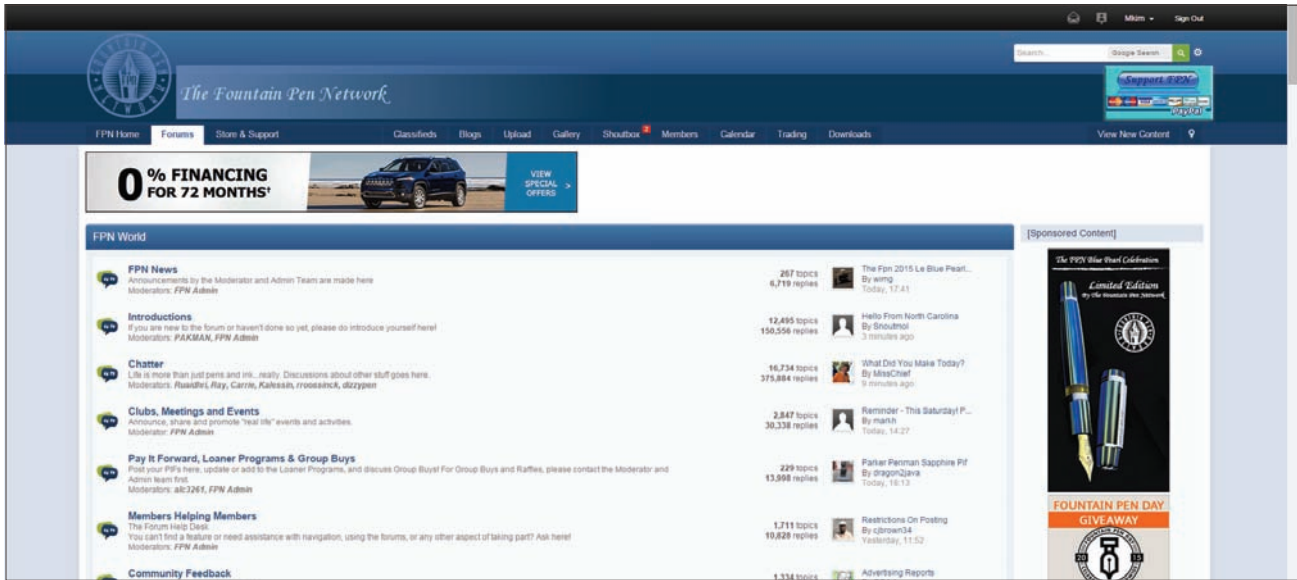
fig.1 www.fountainpennetwork.com (FPN) home page

fig.2 www.fountainpennetwork.com (FPN) fountain pen reviews subsection.

Although inactive, the "browsers" generate data that can be used to drive online content. From view history tracking to Pont Of Interaction (POI) tracking, useful sets of data is formed to aid the function, reliability and efficiency of the platform.

In its "Digital Footprints" research paper, the Pew Research Center describes this technique of browser management as passive digital footprint acquisition.[1]The technique makes data produced by an individual accessible online without deliberate action from the user. Majority of this type of data acquisition is tally calculation and POI location tracking to improve performance of the platform used. Simply having a connected device will generate passive digital footprints, sharing its IP address and other "cookie" information that might be stored. This means that anytime a device is used to connect to another computer network, a unique address that displays name of subject retrieval, initial location, and the digital network route taken to get to the destination.[2] Although this type of data sharing is involuntary and may sound harmful, it is a common necessity for devices to digitally connect to any network between computers and participate in any online activities.offered. They offer little to no contribution towards the service or platform provided.

Once browsers accept the terms of use and voluntarily participates within the digital platform, the browser becomes an active member citizen. Active members are the key bulk of the online population that generate data for online activities. The data they generate acts as accurate and reliable sources of latest trends to keep content relevant for current and porential users.[3] These members regularly use online tools offered, and willingly share their online data to fully utilize contents available. These contributions help grow the functionality and popularity of the online activity, while benefiting from the growth in content of interest. In other words, the active members are equally investing in the platform as the platform is investing in them.

The active members of FPN are the ones who create an online profile and actively participate within the platform. Simply creating a profile opens up many tools and services "browsers" can't access. The user is able to have their own Private Message (PM) box, initiate or post to a forum thread, report inappropriate behavior and sell/trade/buy items through the FPN online

ACTIVE MEMBER

1 Mary Madden, Susannah Fox, Aaron Smith, Jessica Vitak. "Digital Footprints". Pew Research Center, 2007

2 Marina del Rey. "DARPA Internet Program Protocol Specification". in *Internet Protocol*, 1981. California: USC Information Sciences Institute, 1981.

3 T. Aichner, F. Jacob. "Measuring the Degree of Corporate Social Media Use". in International Journal of Market Research, Vol. 57, No. 2, 2015, pp257-275. accessed October 20, 2015. DOI: 10.2501/IJMR-2015-018

classifieds services. These tools provide the opportunity for active members to participate more throughout the site and have a greater impact to the website. As their participation grows, their contribution is tracked and displayed to indicate their level of commitment. FPN uses these tools of contribution tracking by the following:

1. Profile feedback
A feedback system that allows users to rate each other after a trade is made within the FPN classifieds marketplace. Based on feedback, members are able to build credit, making them more favorable to buy/sell/trade with than the newer, less experienced users. [fig.3]

2. Number of posts
A tracking system that displays the total number of posts - a direct content creation made by the user. This indicates the level of commitment and investment from the member on the site. Once again, this type of tracking benefits the trustworthiness or value of FPN members. It is a display of commitment and/or experience in the topics of interest within FPN. Typically, active members of FPN range from 50 to 500 posts depending on how long they have been a citizen of FPN. [fig.4]

I would identify myself as an active member citizen of FPN. I have traded, bought and sold several pens through the classifieds of FPN, and currently hold 250 posts to my user name Mkim. In the past I have posted reviews of different pens, papers and inks. In addition to contributing posts, I have provided other members with maintenance information, and created polls enquiring general discussion topics - all of which created web traffic and original content for the FPN community. Being the "active member" of FPN has granted me a "gold" membership grouping, which allows me to sell and buy using the FPN classifieds with minor restrictions in volume of purchases and sales. In addition to these perks, other members are ensured through my contribution statistics and membership status that any interaction with me will be done with confidence and immediately able to recognize that they are dealing with an experienced member of the site.

fig.3 FPN profile feedback page

fig.4 FPN user profile identification

Active members are the key target audience for online platforms - they are casual users that offer content and exchange of information throughout the digital community. Both platforms and users invest in one another to experience a symbiotic growth. Members are given perks or special treatment as they each rise in the ranking of their citizenship. Higher ranking members either have special privileges or tools that open up to additional content and have some means of communication with the admin or a say in the operations of the platform. Typically, these members have a profile or account which provides an identification system so their contribution and activities are not left unnoticed. It is through this very act of voluntary identification that online platforms are able to extract further individual information to cater specifically to users. The more information or participation the "active member" is willing to provide, the more personalized their digital platform will be. The Pew Research Center describes this online information extraction as an active digital footprint acquisition; where personal data of the user is accessible through their deliberate actions. The voluntary act allows the tailored process to become more personalized and immediately relatable to the individual. It is not a simple tally or POI input, but the subject or behaviour of the interaction. Ultimately, this symbiotic relationship strengthens the usefulness of the platform to the user.

Active digital footprint acquisition is a common practice in online marketing. In the research article "The Targeting of Advertising" Iyer, Soberman and Miguel describe this practice as behavioural targeting, where information is collected from every individuals' web browsing behaviour to specifically tailor which advertisement to display and when.[1] It is able to monitor content read, sites visited, duration of visit, search engine input, and much more to predict the online behaviour pattern of an online participant. Such profiling benefits the consumer, as well as the advertisers, as it provides far more relative content, specific to a target audience. This technique is used to minimize waste in advertising to uninterested audience, which as a result reduces costs and increases possibility of sales.[2]

1 Ganesh Iyer, David Soberman, J. Miguel Villas-Boas. "The Targeting of Advertising", in *Marketing Science*, Vol. 23, No. 3, 2005, pp 461-476. Meryland: INFORMS, 2005.

2 J. Miguel Villas-Boas, "Dynamic competition with Customer Recognition", in *the RAND Journal of Economics, Vol. 30, No.4,* 1999, pp 604-631. accessed February 10, 2015. http://ssrn.com/abstract=182384

As active users utilize multiple online portals or platforms, the value of their contribution becomes greater - this is due to the possibility of "cross pollinating" between different platforms throughout the Internet. The more connections a user has, the more valuable they become as they offer more opportunities to not only create internal traffic within the platform, but external connections to other online platforms. Citizens who are active in multiple online platforms and exist as prominent online figure should be considered a "heavily connected" citizen. Since their activities across multiple platforms are a good indication of "hot" trends or latest content in online offerings, they begin to accumulate followers in their migration patterns throughout the online content. Their identies are significant as they become easily recognized by the online community, and begin to gain an army of followers that popularize whatever content the "heavily connected" user creates or participates in. To make sure they have a strong following, their dedication or quality of content created to their preferred online platforms are often very high, making these citizens extremely valuable assets. Often, these users will invest more into the platform than they demand back. The users fully utilize all possible tools and functionalities offered to them to fully engage with the platform and community within them. It is because of this that their activities or methods of involvement are a good indication of how to further improve the platform and its offerings.

HEAVILY CONNECTED USER

Heavily connected users of FPN are the most dedicated members of the forum, often generating the most informative posts and extremely resourceful in knowledge and experience with fountain pens. Due to their level of commitment, many of them assume moderator positions, monitoring forums and leading discussions throughout their tasked sub sections in FPN platform.*[fig.5] Heavily connected users are celebrities within FPN, as their posts and profiles are linked to multiple content both within and outside of FPN. It is also common for heavily connected users to donate to the site to receive "power-ups" for their accounts, opening up additional tools and further reducing restrictions in site activities. These members are happy to invest more into FPN than what they receive back, as their reward is a strong following or recognition from the community.

On FPN, a user that exemplifies these "heavily connected" citizen's behaviour is a profile named: "watch_art".

fig.5 FPN heavily connected user
watch_art profile tag

The profile currently has 14, 947 posts on FPN, and is a moderator for the "fountain pen review" topic section. The user's fame first started due to his extremely informative instructional posts and videos about how to repair vintage fountain pens. With the encouragement from the FPN community, "watch_art" began repairing, and eventually building custom - made bespoke pens and parts for FPN members. With continuous recognition, he eventually started up a small company named, "Newton Pens," which is a product of passion and involvement within FPN. With the brand name Newton Pens, "watch_art" or Shawn, became a heavily connected user with multiple platforms like Instagram, Facebook, Twitter, and FPN - each of them generating traffic and strengthening his influence. FPN users like "watch_art", generate original content that keeps the community engaged and involved. Their dedication to communities is voluntary and is seen as a labour of love for the user.

The key difference between heavily connected users and active members, is that heavily connected users are active members throughout multiple online platforms. Heavily connected members receive special attention from administrators and gain control of the platforms they participate in, largely due to the amount of followers they bring. Through content creation, promotion and regular usage of the platform they are involved in, their open and public online traffic data act as advertising for other "browsers" or "active members." Therefore, the success of new online platforms often depend on how many heavily connected users it is able to attract, as traffic creation can be seen as the life and blood of any social online platforms.[1]

As the fame of heavily connected users increases, their popularity or fan base could quite possibly become large enough to be considered an "alpha user." The alpha users are pioneers and entrepreneurs of the online community. These members actively promote their online content and activities with the intent of recieving followers and use their online popularity for profiteering purposes. Essentially celebrities of the internet world, they not only follow the latest trends, but often create them with their wealth of online followers that share, support, and participate in the alpha users' contents. Since alpha user citizens are extremely valuable to online platforms, they often act as administrators, leaders and/or VIPs. It is in the best interest of the online platform to keep these citizens interested. This is mainly the reason for significant
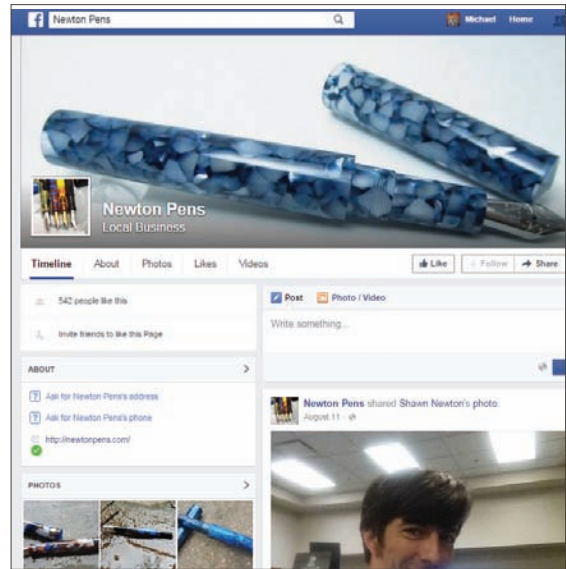

ALPHA USER

---

1 Corey Rudl. "10 No-Cost ways to Generate Site Traffic". Entrepreneur, November 4, 2004. accessed October 10, 2015. https://www.entrepreneur.com/article/73452
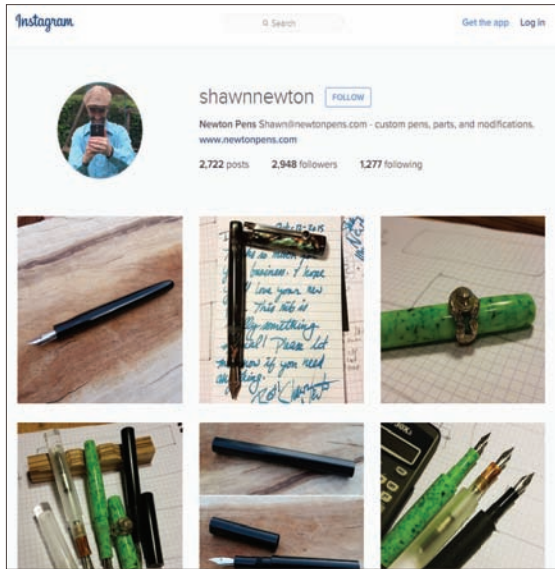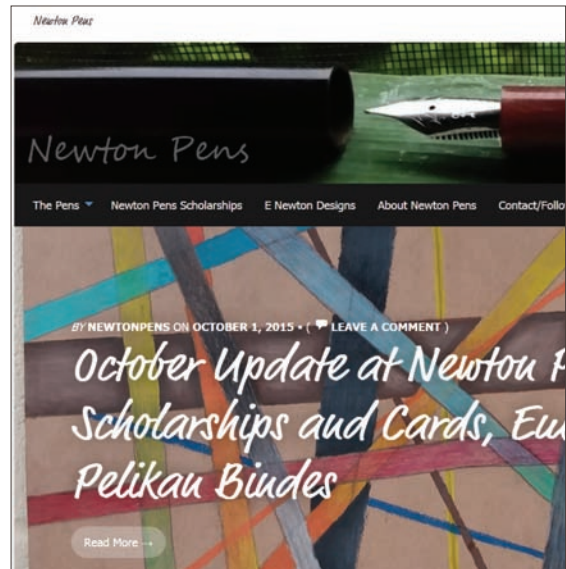
watch_art / Newton Pens Instagram page

watch_art / Newton Pens Facebook page


watch_art / Newton Pens Twitter page

watch_art / Newton Pens online store webpage

investments set aside to key "alpha users" within their contents.

The alpha users of FPN are easily distinguishable, as they are well advertised and followed throughout the FPN community. These members are regarded as highly valuable citizens, and often receive overwhelming support from the FPN community and FPN's admin staff. Their popularity across multiple online platforms provides opportunities for "cross-pollination" between different platforms, and massively increases traffic, growth and exposure of whatever the alpha users engage in. Many of FPN alpha users take advantage of the communal support to start their own business related to fountain pens. Such a marketing technique of creating a direct relationship with the core consumers of a niche market generates a very positive growth in the business.

Goulet Pens is an example of an alpha user success story home grown in FPN. Since 2009, Brian Goulet and Rachel Goulet have extensively shared their passion and knowledge for fountain pens - eventually becoming frequent users and influencers among the FPN community. After learning and educating other members on fountain pens, reviewing products and generating a string of very popular ink comparison videos, they started to form a strong following and community support. Brian saw this opportunity to make his passion into a small family owned business. Selling entry level fountain pens, favourite ink brands of collectors, and unique tools of the trade that big box stores would not ordinarily carry. Directly advertising and receiving feedback from the FPN community, the business became a huge success. As the company became bigger, Goulet Pens activities spread to other social platforms such as: Instagram, Facebook, Twitter, and even YouTube. With no surprise their loyal customers and friends on FPN helped carry over traffic and content for Goulet pens to other portals and increase their exposure and popularity both inside and outside of FPN. Goulet Pens eventually became a celebrity among anything related to stationary online. Many of its social media portals generate a strong following and is now an icon among the fountain pen community. To thank FPN for its ongoing support, Goulet Pens continues to offer FPN members discount, community feedback portals, and exclusive offers with newly released products. For FPN and its members, users like Brian and Rachel of Goulet Pens are vital in keeping the fountain pen market alive and well engaged. Alpha users like Goulet Pens are key to encouraging new hobbyists of fountain pens, and feeding new members to the FPN community. It is in FPN's best interest to keep Goulet Pens engaged within FPN, as they've marked themselves as pivotal resources for site traffic, original content creation and community engagement.
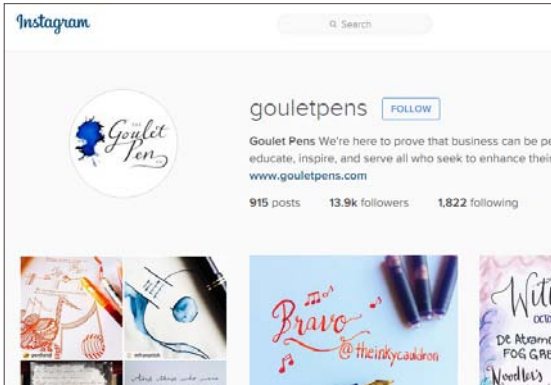
Goulet Pens Instagram page
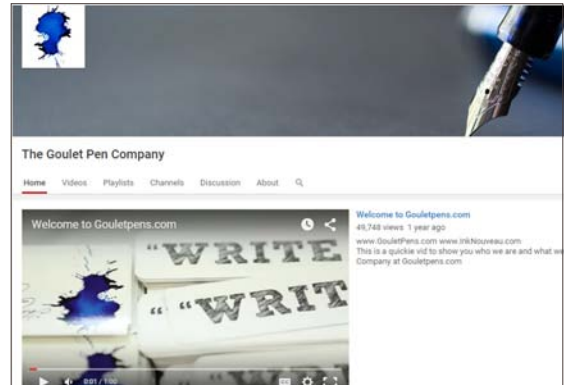
Goulet Pens YouTube page

Goulet Pens online store webpage

Goulet Pens Twitter page

Goulet Pens FPN page

Goulet Pens exclusive product release page

GOULET PENS - FPN CROSS-POLLINATION EFFECT

REVIEWS

FOUNTAIN PEN NETWORK

OTHER CONTENT

FPN PROFILE

MARKET WATCH

digital platform nodes   digital platform citizens   direction of flow   direct link

GOULET PENS - FPN CROSS-POLLINATION EFFECT

Newly Released Product Scenario

NEWLY RELEASED PRODUCT SCENARIO

START

1. Introduced to fountain pen images through social media
2. Browses through online store and purchases an item
3. Finds FPN through fountain pen interest started by Goulet Pens
4. Makes a profile on FPN to become a member
5. Becomes an "active citizen" of FPN

START

1. Heavily connected user participates in FPN
2. Views the new product release made by Goulet Pen
3. Purchases the newly released item
4. Makes review of the newly purchased product
5. Creates video review of the newly released product on Youtube

START

1. Goulet Pen recieves newly released product
2. Makes a post on FPN about the newly released product with "teaser" images
3. The newly released product post is shared on Facebook
4. Tweets the Goulet Pen facebook post
5. Re-posts Goulet Pen twitter images on Instagram

REVIEWS

FOUNTAIN PEN NETWORK

FPN PROFILE

OTHER CONTENT

START

MARKET WATCH

digital platform nodes

digital platform citizens

direction of flow

direct link

GOULET PENS - FPN CROSS-POLLINATION EFFECT

Fountain Pen Novice Scenario

YOUTUBE
START

INSTAGRAM
START

TWITTER

GOULET ONLINE STORE

FOUNTAIN PEN NOVICE SCENARIO

START

1 — 2 — 3 — 4

Introduced to fountain pen images through social media

Browses through the online store but not sure what to buy

Finds reviews on FPN and finds the community interesting

Makes a profile on FPN to become a member

FACEBOOK

Becomes an active citizen of FPN

Purchases an item from Goulet Pens with information learned from FPN

START

1 — 2

Heavily connected user answers FAQ about fountain pens on FPN

Makes informative reviews about products available

Video reviews and help guides are posted on Youtube

START

1

Goulet Pen owner looks through FPN content to learn customer demand

Make product order, stock availability, and promotion decisions based on FPN

REVIEWS

2

1

START

FOUNTAIN PEN NETWORK

FPN PROFILE

3

OTHER CONTENT

START

MARKET WATCH

digital platform nodes   digital platform citizens   direction of flow   direct link

If traffic creation is the lifeblood of the Internet, the alpha users are the heart. They are the ones that initiate and appropriate activities throughout various online platforms, directing the flow of online traffic through "lead by example" methods. Due to their large follower base, these users often profit from their online activities, either through advertising or sponsorship from different companies both digital and physical. They are valuable assets to business as they are catalysts for new online ventures and activating online content.

Alpha users often create business opportunities through their fame online. YouTube's most subscribed user "PewDiePie" or Felix Arcid Ulf Kjellberg, has 39 million subscribers as of Oct. 2015. He also has more than 5.9 million followers on Instagram and 6.6 million followers on Twitter. These platforms become media outlets PewDiePie is able to leverage and entertain his fans. What makes PewDiePie so unique is that his celebrity status was solely made through his online activities. Majority of his posts are about his latest muses, gaming experiences and new game product releases. Due to the nature of his posts and popularity, he is able to lead his 50+ million followers by example through his different social platform profiles. With the growth of his impact on the gaming industry, gaming companies and related businesses continue to endorse, sponsor, and even produce products in partnership with PewDiePie.[1] Although PewDiePie is a completely online entity, he is a major leader in the success or failure of real business enterprises in the gaming industry. As more of these online celebrities emerge, industries across all consumer products can no longer ignore the resourcefulness of the alpha users. They become powerful assets in the marketplace and portrayed as leaders in their respective online community.[2]

1 Paul Gallagher. "Meet Felix Kjellberg – the new 'King of the Web'". The Independent, November 14, 2013. accessed October 5, 2015. http://www.independent.co.uk/life-style/gadgets-and-tech/features/meet-felix-kjellberg-the-new-king-of-the-web-8947100.html

2 T. Aichner and F. Jacob, "Measuring the Degree of Corporate Social Media Use". in *International Journal of Market Research*, Vol. 57, No. 2, 2015, pp257-275. accessed October 20, 2015. DOI: 10.2501/IJMR-2015-018

MIRROR WORLD

As an aspiring architect, I find myself pondering the remarkable resemblance of these digital platform citizens to that of public space users in the physical world. Although digital platform citizens are digital entities, the users themselves are human - so why should their treatment with physical platforms differ? The definition of "public space" is challenged by the notion of what the phrase means in a digital realm versus a physical one. Should architects, much like business models in other industries that embraced Web 2.0 features, start considering the online world and their citizens as co-developers of space? David Gelernter, a computer science professor, stated that not only does a digital public space reflect the real world, but offers something even more valuable, a smaller real world that has the power to consolidate or concentrate population relative communities.[1] (much like FPN) He coined the term Mirror World to describe this phenomenon and describes it in the following way:

> The Mirror World isn't a mere information service. It's a place. You can stroll around inside a Mirror World. You can meet and (electronically) converse with your friends, or random passers-by, chat with a policeman or a teacher or a politician, discover like-minded fellow-citizens; form some idea of the public mood.

> Well-so what? you can do the same thing in the real world, can't you? Sure you can, it's just that you don't. (All right, I don't. Lots of people don't...) For most people, the real world is just too big, sprawling, complicated, disorganized, intimidating, cold-and-wet or smoggy-and-smelly or expensive, unpredictable, inconvenient, dangerous, whatever. Of course, you're no hermit. But you associate with your own crowd. It just isn't possible to deal on a friendly basis (on any basis) with a whole good-sized town-full of people. You inhabit some limited sub-world of necessity, and so does everyone else. Do a million separate, barely-intersecting worlds make a polity? I don't think so.

> The "small town," an institution where you actually know your fellow citizens-now there is an interesting idea. The Mirror World is a re-application of the same concept on a smaller and larger scale.

1 David Gelernter, "Mirror Worlds: or the Day Software Puts the Universe in a Shoebox...How It Will Happen and What It Will Mean" Oxford University Press, 1992

Much smaller: the whole town fits inside your computer. You can do the Grand Whirlwind Tour, see everyone and everything, without changing out of your pajamas. Much larger: this small town might support a population of millions. The Mirror World as public square has many implications.[1]

To form a better understanding of this phenomenon, the characteristics of **what it means to be a public realm should be explored. This would act as a measuring stick to determine how the internet exhibits or falls short in being called a public realm.**

---

1 David Gelernter. "Mirror Worlds: or the Day Software Puts the Universe in a Shoebox...How It Will Happen and What It Will Mean" Oxford: Oxford University Press, 1992
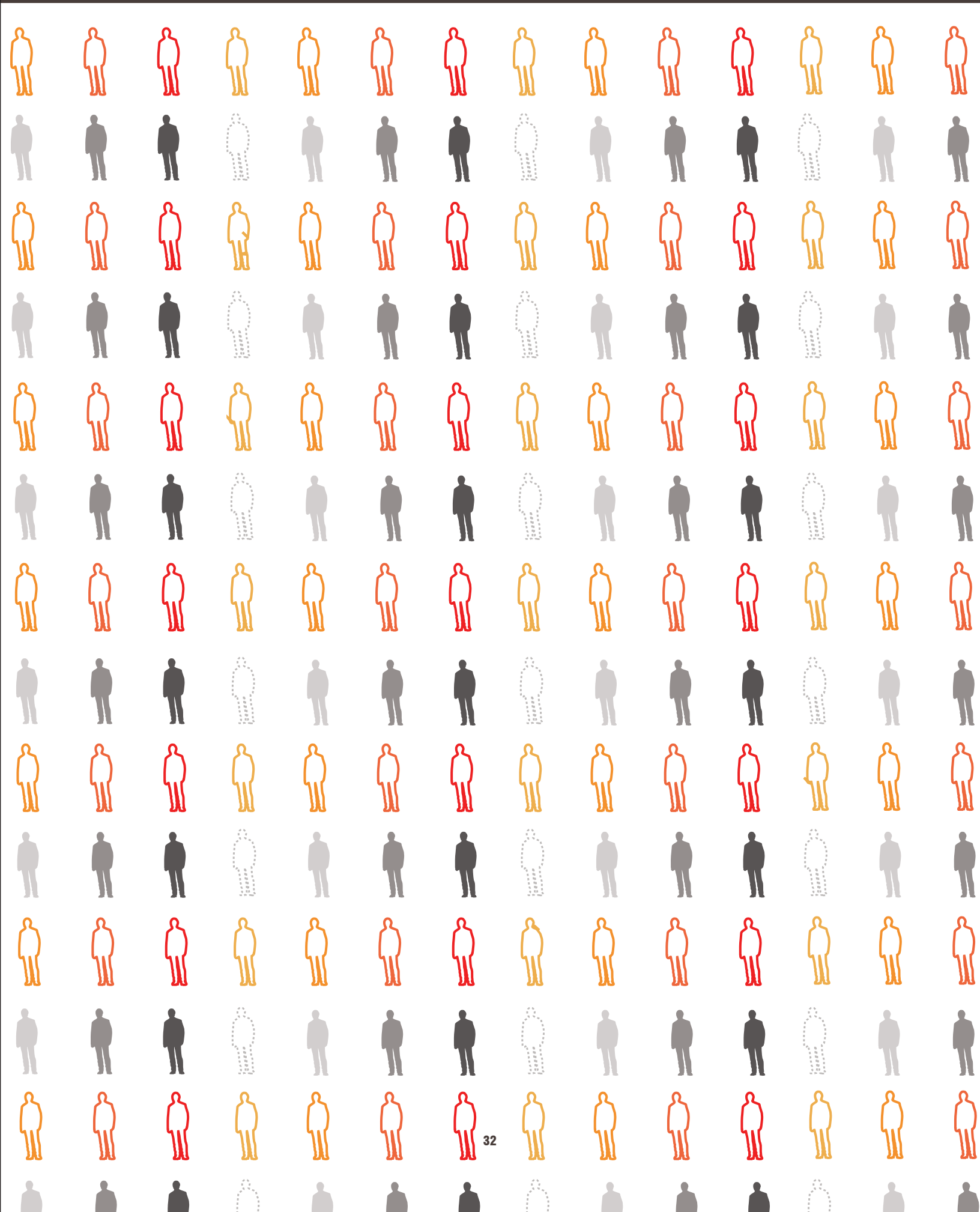
DIGITAL PLATFORM
(MIRROR WORLD)
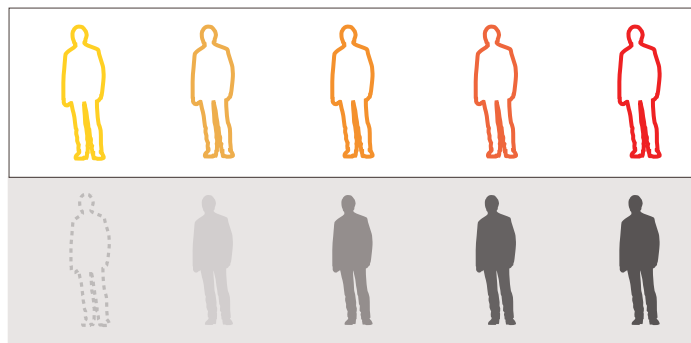
PHYSICAL PLATFORM
(REAL WORLD)

THE INTERNET AND THE PUBLIC REALM.

CHARACTERISTICS OF THE PUBLIC REALM

Today, the online profile has reached enough complexity to be called an identity. An identity that provides its users an opportunity to represent themselves as a unique individual. Whether it is through passive or active digital footprints, an online profile provides a vivid picture of how our digital selves became what it is today. As unique individuals start to gather and interact online, the digital population becomes a representation of real individuality, a mirror world full of real people, as David Gelernter positioned it. Forming its own political, social and even cultural economy, the Internet becomes something more than just a network of computers - it houses a very real human population. But, even with its ability to accurately represent an individual, has the digital world reached its critical mass or perhaps sophistication to truly be called, a public realm? Does the phenomenon of digital platform citizens merit public entities online and if so, how then would a designer react to this public entity? To answer these questions, a definition of the public realm outside the boundaries of physical features or attributions must be explored. To be more specific, when does a space in the metaphysical sense, belong to the public? With this goal in mind, researchers in sociology were given priori in finding a non-physical description of the term public realm. This approach allows the research to take an empathetic approach to participants of the public realm, and with it determine when a threshold is crossed where the idea of space becomes that of a public realm. With this empathetic definition, the online world and its citizens are evaluated and determined whether or not it can be called a part of the public realm. Once such a relationship is measured, the significance of this implication can be explored as to what kind of impact such an emergence would have on the architectural practice. The emergence of a new contextual concern in architecture that has a non-physical plane of existence, full of its own citizens and their unique needs.

Looking into the research of sociologists Brighenti, Hajer, Reijnderp, Lofland, and Iveson, there is an underlying agreement that the behaviour of the public realm is a cooperative exercise, which demonstrates three key features: community, exchange and authorship.

The sense of visibility and inclusion or acceptance must be present to be called a public realm. A strong sense of belonging or community forms to encourage people to actively participate.

Iveson describes this as a place for *social address,* where social opinions and matters have a place for discussion. It is the process of addressing what he calls a "horizon of strangers" that is at the heart of what is a public realm.[1] The opportunity of this type of acceptance of individual thought, or even the possibility of having an audience of strangers, is what makes a space a public realm. The term strangers is such an ambiguous way of describing the people involved - so who are these strangers? Lofland describes the notion of strangers in a public realm in the following way:

> The public realm is constituted of those areas of urban settlements in which individuals in co presence tend to be personally unknown or only categorically known to one another. Put differently, the public realm is made up of those spaces in a city which tend to be inhabited by persons who are strangers to one another. Put differently, the public realm is made up of those spaces in a city which tend to be inhabited by persons who are strangers to one another, or who "know" one another only in terms of occupational or other nonpersonal identity categories (for example, bus driver-customer)...In the city, when one leaves private space, one moves into a world of many unknown or only categorically known others (biographical strangers), many of whom may not share one's values, history, or perspective (cultural strangers). In short, the public realm is a form of social space distinct from the private realm and its full blown existence is what makes the city different from other settlement types. The public realm, as my subtitle indicates, is the city's quintessential social territory.[2]

Lofland also identifies another significant trait of what it means to be a public realm: the clash of unfamiliar values, history and perspective. In other words, the exchange of culture by a population of what Lofland describes to be "cultural strangers." Hajer and Reijndorp supports this claim by simply describing a public realm as a place where

1 Kurt Iveson. "Publics and the City". New Jersey: Wiley-Blackwell, 2007.

2 H. Lyn Lofland. "The Public Realm: Exploring the City's Quintessential Social Territory". New Jersey: Transaction Publishers, 1998.

"exchange between different social groups is possible, and actually happens." Well why is exchange so important for public realms to stay true to its identity? It is because it reaffirms the space as a place of public address?

Brighenti argues that exchange between cultural strangers is so much more than that because it allows the exercise of power, or better yet, the resisting of power. As cultural strangers exchange values, history and perspective, groups of people form that share these traits. As these groups form, the struggle between opposing groups help maintain that this space is true in its nature to be public. Simply put, even if there is a dominant ideal or group, an opposing force, however small can exist and is free to exercises its resistance from the majority view. The freedom of exchange - and furthermore - the health of exchange, determines the diversity and inclusiveness of a public realm.

Since the population of a public realm is a collective of individuals that are free to share their personal thoughts and opinions on a subject, the individual is able to scale how their views differ from the dominant consciousness of the public realm. Furthermore, there is no blockade for individuals to freely think and author their own view into the larger communal consciousness. Personal value, history and perspective or cultural make-up is freely created, exercised, and inserted into the combined consciousness. Beyer describes this procedure by using a traditional physical public space as an example. He states that every individual user has a subjective use or perspective of a public space they encounter.[1] For instance, a child may see a park bench as a place where "mommy" sits. A teenager may see it as the place where he had his first kiss. A parent might relate to it as the place where her child walked for the first time. Through individual value, history and perspective, a single object in a public space will mean different things to different people. It is the power to be able to take claim of individual bias, use, or memory of the publically shared content and freedom to exercise or publically address this individual authorship that empowers the people involved in the public realm. Therefore, it is imperative for subjective behavior or individual authorship to be encouraged. Only then can a public realm house the value, history, and perspective of many. It is because of authorship or subjective bias according to Lefebrre, that socially constructed spaces can continue to be constructed in both culturally and politically dynamic way.[2]

---

1 Daniel Bayer. "Designing Public: Behavior in Public Spaces", Basel: Birkhauser, 2008

2 Henri Lefebrre. "Production of Space". New Jersey: Wiley-Blackwell Publishing. 1991

Therefore, in order for the public realm to house dynamic and changing culture of the many, there needs to be a strong encouragement and accessibility of authorship.

If we are to use this definition of public realm as a place of community, exchange and authorship in architecture, the notion of public space cannot have a prescribed design. It is a direct response or reflection to the existing social-scape at the time. To summarize, the three key attributes of the public realm:

Community
An inclusive environment that allows gathering of ideals to form a greater consciousness within groups of people. The community is visible, clearly differentiating themselves from other groups within the public realm. Furthermore, they are able to gain exposure and have a place for public address.

+

Exchange
An act of exchange in value, history and perspective within the public realm. The exchange is encouraged and free, allowing non-authoritative or strictly intentional happenings to occur. The method or structure of exchange may be designed, but the freeness or rate of exchange is not stifled. The health and wellness of the public realm strongly depends on the wealth of exchange that occurs within its participants.

+

Authorship
Each individual that is part of the public realm is free to express themselves. As much as the participants may be a part of a larger community, their individuality is able to be expressed and identified. As participants, they may choose to be heard or stay anonymous within the community, authoring new perspectives to the collective or to simply be an observer of the emerging collective consciousness.

=

Public Realm
A context of visible, accessible and participatory cooperative exchange of information and culture. It is a place where individual thought can be tested against the public consciousness, providing opportunities for individual voices to change the public collective consciousness.

This understanding of the public realm in the context of the built environment, whether it be physical or digital, is using an empathetic design approach. The notion of "space" that learns, grows and even dies according to the public population that the place accommodates.
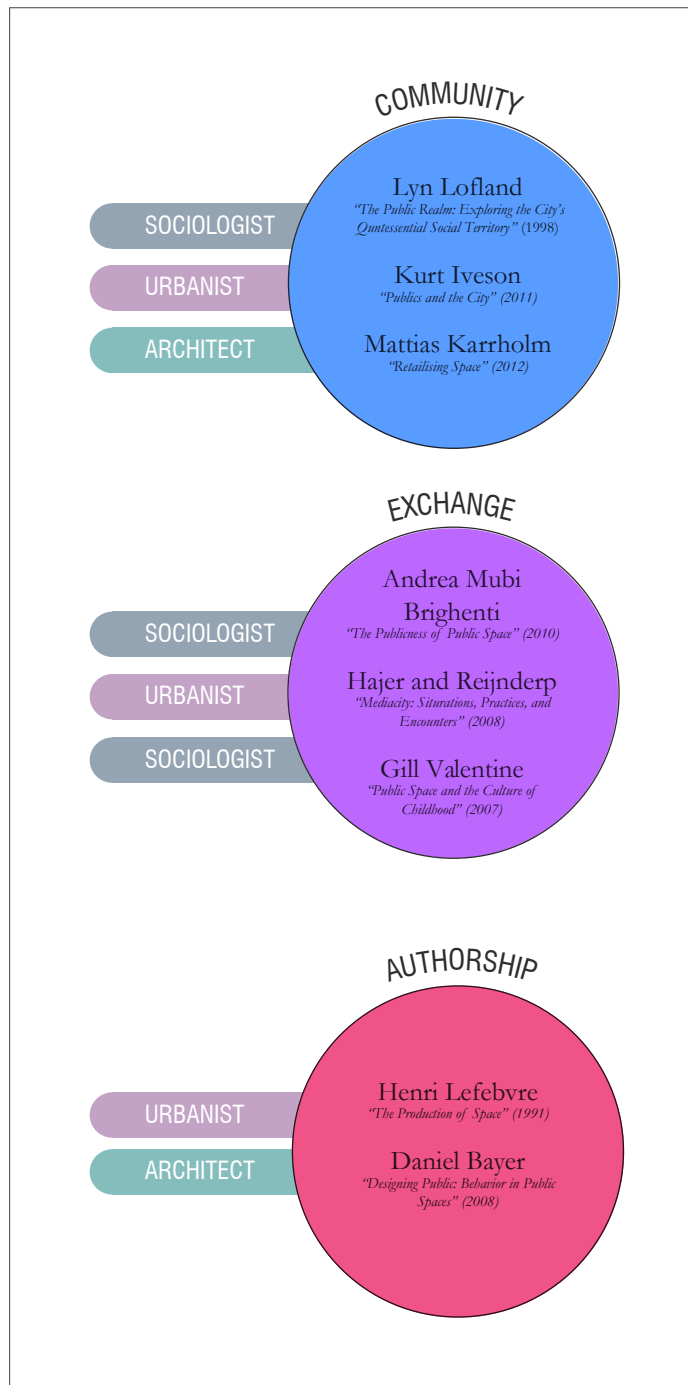
COMMUNITY

SOCIOLOGIST

URBANIST

ARCHITECT

Lyn Lofland
"The Public Realm: Exploring the City's Quintessential Social Territory" (1998)

Kurt Iveson
"Publics and the City" (2011)

Mattias Karrholm
"Retailising Space" (2012)

EXCHANGE

SOCIOLOGIST

URBANIST

SOCIOLOGIST

Andrea Mubi Brighenti
"The Publicness of Public Space" (2010)

Hajer and Reijnderp
"Mediacity: Siturations, Practices, and Encounters" (2008)

Gill Valentine
"Public Space and the Culture of Childhood" (2007)

AUTHORSHIP

URBANIST

ARCHITECT

Henri Lefebvre
"The Production of Space" (1991)

Daniel Bayer
"Designing Public Behavior in Public Spaces" (2008)

fig. 6 The three elements of public realm

INTERNET AND THE PUBLIC REALM

In the effort to measure whether or not the Internet has matured enough to truly be called, a public realm, a metaphysical definition of the public realm has to be established - using not a physical description or criteria, but an empathetic definition in relation to its citizens. The goal is to discover when the experience of "place" cross a threshold to become a place of public realm. This empathetic approach to defining the public realm reveals three key principles or characteristics of "place" and the behaviour of its citizens: a strong sense of community, diversity in exchange and opportunity or encouragement of authorship.

Can the Internet be said to exhibit these characteristics? If so, how are the citizens involved in the community, exchange and authorship experience in the online world? To investigate the parallels or shortcomings of the Internet with the public realm, the online community of reddit and its users will be examined, followed by the exchange within a community exemplified through YouTube, and the support of authorship through Facebook, Instagram, and Twitter.

EACH CASE STUDY WILL BE EXAMINED IN ITS DIGITAL PLATFORM CITIZEN POPULATION AND ITS DESIGN TO FACILITATE THEM.
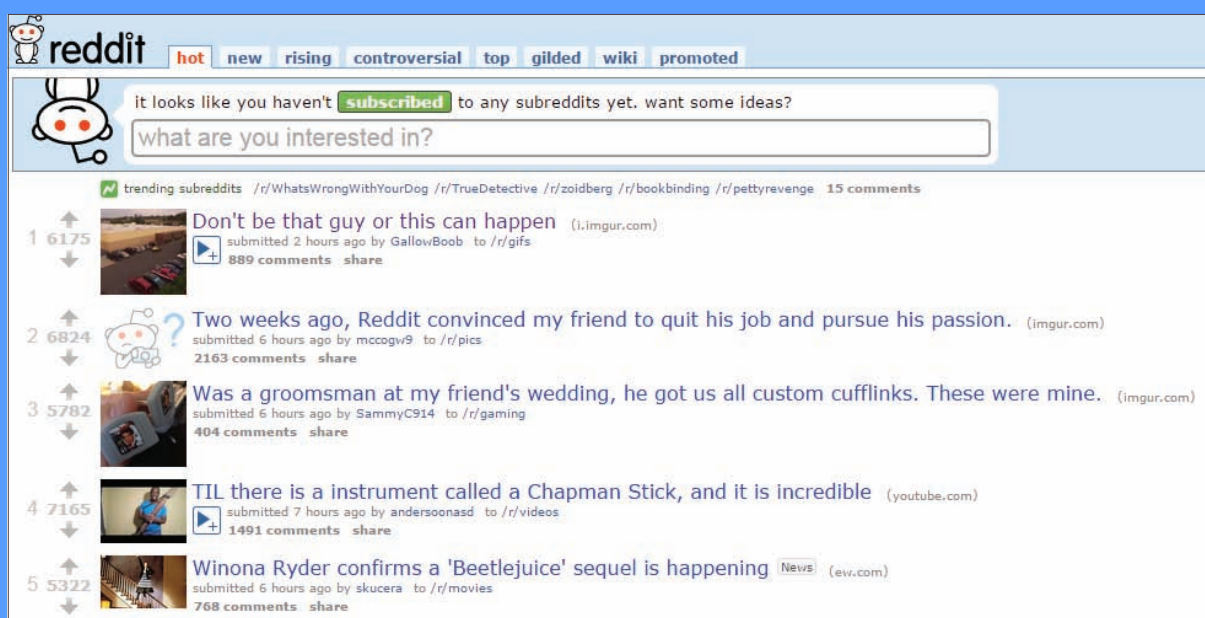
fig 7. reddit home page

Reddit is a social networking, entertainment and news forum that takes on a community - based approach to content creation. The platform operates as a bulletin board system, where registered users are able to curate its content by voting posts up or down. This process allows the more popular, relative and active posts to have longer lifespan in the front page.[1] Although reddit does have a main forum page (www.reddit.com), it has thousands of subreddit pages (www.reddit.com /r/todayiLearned/, www.reddit.com/r/gaming/, www.reddit.com/r/Showerthoughts/, etc.) that are controlled by smaller interest groups. Due to the extremely active nature of their digital platform citizens (called redditors), most posts are pushed out daily from the front page by the end of the day, making posts relevant and up to date news. Because of this up-to-date nature of reddit forums, what initially started out as a message board for interest groups, became a popular news and marketing platform. Redditors are usually extremely involved members in their subgroups, either as hobbyists or professionals related to the subject of the subreddit. Such a tight community of involved people makes reddit a great place for social networking and initiating community funded projects.

To review, community in a public realm was previously defined as:

An inclusive environment that allows gathering of ideals to form a greater consciousness within groups of people. The community is visible, clearly differentiating themselves from other groups within the public realm. Furthermore, they are able to gain exposure and have a place for public address.

---

1 Danny Dover, "Reddit algorithm". SEOMOZ, July 2, 2008. accessed December 2, 2015.https://moz.com/blog/reddit-stumbleupon-delicious-and-hacker-news-algorithms-exposed

THE ONLINE COMMUNITY CASE STUDY: REDDIT

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DESIGN METHOD .

Reddit's digital platform citizens are a fine example of how and why online communities exist. Reddit is a place of gathering for like-minded people and general acceptance of who you are and how you represent yourself.

People who are browsers use reddit as a news bulletin board. Posts written and curated by redditors are often breaking news or exclusive content, as the platform allows quick file and information sharing within an active dedicated interest group. Although the content may not be entirely accurate, the read of other heavily involved online platform citizens within subreddits attract many browsers. Browsers do not have a reddit account and therefore do not participate in the up or down rating of posts, only allowing them to be observers rather than curators of content.

BROWSER

Active members are the main curators of reddit pages. These members have active accounts allowing them to post, but more importantly down or up rate other posts. The ability provides active members to self curate the content being posted. Although active members may not be heavily involved in content creation, they are the majority bulk of citizens that ultimately determine the popularity or success of content within the reddit community.

ACTIVE MEMBER

Heavily connected users of reddit are people who are invested in providing new content or verifying content posts on reddit. This may mean that the particular user is heavily involved in the subject matter of the subreddit, or extremely passionate about the topic, investing their personal time and resources to research and post related content. These users begin to obtain popularity and online recognition as their contribution is well received within the reddit community.

HEAVILY CONNECTED

Alpha users of reddit are very much like community leaders in their field. They are the catalysts for new reddit community ventures, information sharing and providers of exclusive content to the community. Due to the immediacy and intimacy the reddit platform provides, becoming an alpha user is seen as a strategic position for spokespersons and marketers of large organizations. The direct relationship with target consumer audience allows quick and accurate methods of market research, prototyping and announcement sharing. The existence of alpha users on reddit forums has benefits for the general public as well, as it allows for a place for consumers and supporters to have their voices heard by the industry community leaders.

ALPHA USER

Reddit is designed to be a communication platform that is flat and truly embraces folksonomy structure. Coined by Thomas Vander Wal, Folksonomy describes a taxonomy system that relies on its users to create, classify, and value items or objects within the online content.[1] No matter who you are or what kind of digital citizen you may be, there is always an opportunity to be heard. In the purest sense, it is a place of public speech for digital platform citizens. In addition to how reddit platform is designed, the values of the team responsible for reddit exhibits the very values described previously in defining what a public community means.

If further convincing is required to regard reddit as a community in the way previously defined by the thesis research, one only has to look as far as their "about" and "values" page.

Quoted directly from their "about" page:

How reddit works

redditors vote on which stories and discussions are important. The hottest stories rise to the top, while cooler stories sink.

Comments can be posted on every story on reddit. Comments add information, content, and humor.

Anyone can create a community (called "subreddits"). Each subreddit is independent and moderated by a team of volunteers.

Reddit is open source. Community members are constantly tinkering and contributing features, bug fixes, and translations back to the site.[2]

Quoted directly from their "values" page:

1. Remember the human
-Be authentic, pasisonate, and empathetic.
-Treat others as you would in person, and remmber we all make mistakes.
-Champion diversity.
-Default to transparency, and when you can't be transparent, be honest.

---

1 Thomas Vander Wal, "Folksonomy Coinage and Definition". *Vanderwal.net* last modified February 2, 2007. http://www.vanderwal.net/folksonomy.html

2 reddit. "about" accessed November 3, 2015. https://about.reddit.com/

2. Give people voices
-Create a safe space to encourage participation.
-Embrace diversity of viewpoints.
-Allow freedom of expression.
-Be stewards, not dictators. The community owns
itself.

3. Respect anonymity and privacy
-You are not required to share more than you are
comfortable with.
-Having information doesn't give you a license to
use it.
-Allow people to be as anonymous as they choose,
including ourselves.
-Value the candor afforded by anonymity.

4. Embrace experimentation
-Don't let "that's the way it's always been done" be
a reason.
- Seek new ways to be better.
-Be willing to try new things and fail.
-But remember wheels don't always need
reinventing.

5. Make deliberate decisions
-Make all decisions within the framework of larger
goals.
-It's better to make an unpopular, deliberate
decision than to make a consensus decision on a
whim.
-Consciously explore options and impacts of
potential paths.
-Voice disagreement acknowledge that dissension is
okay.

6. Be doer
-Turn ideas into actions and get things done.
-Don't be paralyzed by the status quo.
-Find the balance between perfection and progress.
-Build or the future and leave things better than you
found them.

7. The spirit of Lambeosaurus embiggens us all
-Work is better when you're having fun.
-Don't take ourselves too seriously.
-Celebrate the good: recognize successes and
reward accomplishments.
-There must be four subpoints to each value.[1]

    Although Reddit does present an innocent free speech platform at first glance, its shortcomings are shared with many other online content that rely on folksonomy as their core design structure - the flaw of dependence on the collective "folk" intelligence. Ultimately, the significance or value of content created on Reddit is determined by its popularity, not necessarily its usefulness or correctness in the material shared. The forum often becomes a popularity contest and not always a reliable source of information. The redemption of this type of structure comes from the size and integrity of its participants - The larger the forum and its participants are, the more correct or relevant the curation of content will become. Much like the success of Wikipedia's structure: numerous individuals constantly inputting, rating, and editing content - eventually the collective effort will flatten out malicious or incorrect content created by the few individuals, producing content that is of collective interest and benefit. Therefore, folksonomy focused design philosophy of online content is critically dependent on the scale and behaviour of its participants. Very much a product of Web 2.0 type online content, Reddit represents a fragile public space co-created and solely dependent on the actions of its participants.

1 reddit. "values" accessed November 3, 2015. from https://www.reddit.com.
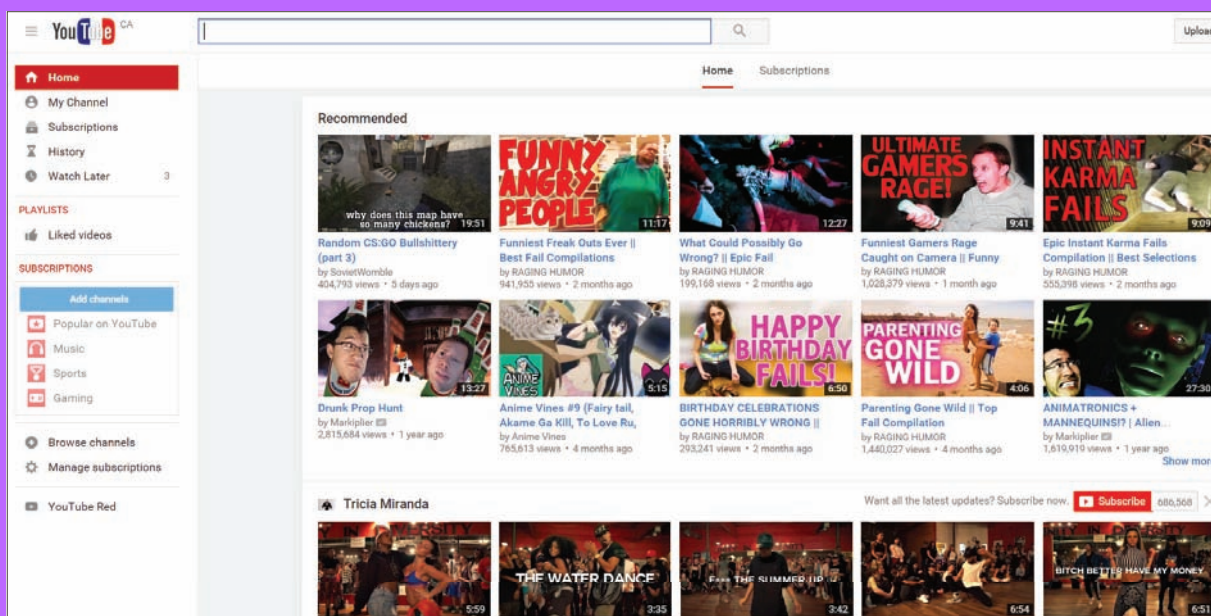
fig. 8 YouTube home page

YouTube is a video sharing online platform that allows users to rapidly upload, download, and view video content around the world. YouTube was founded in 2005; by this time the web community was well developed and thriving with online activity. Online culture was booming and proved to be an effective way to connect people, events and information around the world. However, before YouTube there was no prominent web hosting for video exchange. As it became easier to record and format video content, a demand for mass exchange of video content online arose. Chad Hurley, Steve Chan, and Jawed Karim (the founders of YouTube) have conflicting comments about the inspiration behind the creation of YouTube, whether it is the dilemma of searching for trending videos online or trying to create an online video sharing platform inspired by online dating sites[1]. What they can agree on was that they saw an opportunity to serve the demand for easy online video sharing service. It is from this demand that YouTube grew as a community driven exchange hub for the online community. As the number of digital citizens and the amount of time they were spending on the website increased, YouTube was seen as a viable video communication tool for not just amateur videos but for marketing purposes. Google saw this opportunity and purchased YouTube in 2006 for $1.65 Billion,[2] further fueling YouTube as the primary platform for not only video exchange but for any video viewing purposes. It's popularity and the amount of content uploaded around the world contributed in making YouTube an online archive of human culture (in video format). As of 2014, investment services Jefferies Group estimated YouTube's valuation to be up to $40 billion.[3]

To review, exchange in a public realm was previously defined as:

An act of exchange in value, history and perspective within the public realm. The exchange is encouraged and free, allowing non-authoritative or strictly intentional happenings to occur. The method or structure of exchange may be designed, but the freeness or rate of exchange is not stifled. The health and wellness of the public realm strongly depends on the wealth of exchange that occurs within its participants.

1 John Cloud. "The YouTube Gurus". Time.com, December 26, 2006, accessed November 10, 2015. http://content.time.com/time/magazine/article/0,9171,1570795,00.html

2 "Google closes $A2b YouTube deal". The Age, November 14, 2006. accessed November 2, 2015. http://www.theage.com.au/

3 Garett Sloane. "YouTube May be Worth Up to $40 Billion-More Than Twitter". ADWEEK, September 3, 2014. accessed November 10, 2015. http://www.adweek.com/news/technology/youtube-may-be-worth-40-billion-more-twitter-159861

THE ONLINE EXCHANGE CASE STUDY: YOUTUBE

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DESIGN METHOD .

Unlike reddit, the YouTube platform is used as a utility tool - its main focus is not to form communities and bring people together but to act as a tool for video exchange. Digital platform citizens of YouTube still form communities to encourage exchange, but with their focus being on mass exchange - form a more pragmatic relationship with one another.

Browsers of YouTube enter the website with the sole intent of watching uploaded videos. Browsers don't contribute to YouTube directly with video upload, their contribution come from passive footprint acquisition. Their presence is felt through the video's view count, as tally of the view count raises the video's circulation opportunity. It is through this online passive footprint management that browsers contribute and help maintain YouTube's success.

BROWSER

Active members of YouTube are the digital citizens that create accounts and contribute to YouTube voluntarily through active participation within the platform. Only when signed on, are you able to upload your own videos, comment, up vote/down vote videos, and subscribe to YouTube channels. These options provides opportunities for active members to participate and grow the community of YouTube. Majority of YouTube's digital platform citizens are active members, participating in the curation of YouTube's video content but not significantly contributing videos of their own. Although they may not be uploading videos themselves, it is their power to freely up vote/down vote and share videos that makes active members a key majority demographic.

ACTIVE MEMBER

Heavily connected citizens of YouTube are the users that not only are heavily involved in the curation and sharing of content but provide popular original video content of their own. These users amass enough followers on YouTube for their videos to have some sort of impact in the YouTube community. The weight of their online social or cultural impact is determined by the amount of subscribers they are able to reach with their videos. In doing this, their channel becomes a mini hub for exchange with generous amounts of views, votes and discussions that their videos encourage. Many heavily connected users are still amature video producers and do not consider it their profession, but to further encourage content creation ,YouTube offers them financial incentives based on how many views and subscribers they receive through their channel.

HEAVILY CONNECTED

ALPHA USER

Alpha users of YouTube are the citizens that obtain substantial amount of subscribers - which they are able to profit from as a business venture. Due to the sheer number of people alpha users can reach with their channel, they are often endorsed or partnered with marketers. Alpha users utilize their number of subscribers as valuable assets, providing advertisers an opportunity to reach millions of people with very little advertisement investment. Although alpha users often have a personal financial agenda, their ability to share video content with a broad audience makes these users a key catalyst for mass exchange within YouTube. Depending on the type of videos they upload, alpha users have a strong influence in not only affecting Internet culture and industry - but exchange of trends and culture. Their popularity and growing audience makes alpha users digital community leaders, engaged in a plethora of genres ranging from fashion, lifestyle, gaming, education, technology, music, etc. Within each of these genres, alpha users play key roles in being the hub of video information exchange that have a very real impact in both the digital and physical world.

THE ONLINE EXCHANGE CASE STUDY: YOUTUBE

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DESIGN METHOD .

YouTube exhibits hyper inflated rates of exchange in video content like we've never seen before. Everything from sharing/ viewing experience, diversity of content available and the rate of exchange happening truly boggles the mind. There has never been such a video archive of cultural exchange - with participants that span the globe, such success of exchange was made possible because of the Internet. Taking advantage of the Internet's ability for rapid data sharing and global communication, YouTube exhibits unique behaviours in the design of its method of sharing and diversity in exchange.

a) Method of sharing/viewing videos

YouTube offers a platform which enables users to easily upload their videos via their profile channel. These videos are tagged with key words during upload, making it easier for YouTube search engine to categorize and prioritize videos. As the viewer, it is as simple as typing out whatever topic or title of interest in YouTube's homepage search bar. As a video receives more views, the tally bumps up its search engine algorithm priority to promote the momentum of views it is receiving.[1] As viewing patterns emerge, YouTube is able to host multiple micro cultural shifts and trends (albeit within digital culture). The online platform experiences trends emerging through video exchanges - creating a breeding ground for new ideas, critical thinking and reflection of both self and others. Opinions are expressed through viewers' comments, discussions and ratings of the uploaded content.

b) Diversity in Exchange

In terms of videos, YouTube currently offers 17 categories of video channels. The categories are: *Best of YouTube, Recommended for You, Paid channels, Music, Comedy, Film and entertainment, Gaming, Beauty and Fashion, Automotive, Top YouTube collections, Animation, Sports, Technology, Science and Education, Cooking and Health, News and Politics.* These categories are meant to represent the general fields of video channels available but it is not accurate as to the different types of videos offered within the channels themselves. The categories of channels are fixed for the purpose of organization and layout, it does not restrict users from creating subgroups (playlists) within their channel. There are subgroups within subgroups even within a single channel, offering a diverse coverage of video content catering to different audiences.

---

1 Aaron Charles. "How Does YouTube Prioritize Its Results?". Chron. accessed November 10, 2015. http://smallbusiness.chron.com/youtube-prioritize-its-results-72446.html

Although YouTube is a great public space for video sharing, the business model behind YouTube challenges what it means to be a public space on the internet. It is designed to be as open and free as possible, but there is an underlying advertising business model for revenue creation. Although there is an argument as to whether or not YouTube was first a business idea or a public service, the base line is: YouTube is currently worth up to $40 billion due to their advertising possibilities. Although there is a revenue creation agenda within the platform, I would argue that YouTube, as a public space can be paralleled to a privately owned public space (POPS). Much like POPS, there is a financial agenda to the creation of these public spaces, but ultimately the public benefits from its creation. What becomes more problematic for YouTube as public space is not their advertising but the incentive structure that affects its users and upload content. As digital platform citizens gain more subscribers, based on their channel's popularity, the content creators are paid proportionately by YouTube to incentivize their efforts in gaining popularity. This affects the type of content produced - where popular uploading membres like the alpha users generate content directly as a product of viewer demand, not caring about its value or contribution to the public. Although this does have negative effect in the overall content of YouTube, the content produced is still a direct reflection of digital platform citizens within YouTube. As a product of Web 2.0 based services, ultimately its success as a public space is determined by its users.

Facebook, Instagram, and Twitter logos

Online social media platforms such as Facebook, Instagram, and Twitter are examples of Web 2.0 services that create a personal identity in the online world. Through both active and passive digital footprint acquisition, users generate and publically share data that are personal. This includes current location, friends and relatives, activities and events they have gone and going to, what they recently purchased, the list goes on. Combined, the series of personal data produced by online social media platforms paint a clear picture of self - both who we represent ourselves to be (voluntarily through active digital footprint) and who we are through our past actions (involuntary passive digital footprint). O'Hara describes this to be Lifelogging, "to trace the 'threads' of an individual's life in terms of events, states, and relationships" thus, forming a stream of memory that forms a curated identity.[1] As digital activities increase within the social platforms, actions further shape the identity of the person and becomes a part of their digital history. This introduces a very powerful concept in the digital world, the notion of authorship or ownership of the content or whatever digital footprint citizens may have created. People are able to look back and see what kind of social impact they had on others and in shaping themselves. There is a sense of responsibility or legitimacy to online public identity, the more data users voluntarily and involuntarily produce, the clearer their public identity becomes. It is this very act that fuels the opportunity to use behavioral marketing strategies on the Internet - each individual sharing their personality and past history as a computational or readable data, producing rich social climate research materials. Online social media has matured from being just a quirky new communication and entertainment tool, it has grown to become a powerful market and social research asset.

To review, authorship in a public realm is defined as:

"Each individual that is part of the public realm is free to express themselves. As much as the participants may be a part of a larger community, their individuality is able to be expressed and identified. As participants, they may choose to be heard or stay anonymous within the community, authoring new perspectives to the collective or to simply be an observer of the emerging collective consciousness."

---

1 Kieron O'Hara, Mischa M. Tuffield, Nigel Shadbolt. "Lifelogging: Privacy and empowerment with memories for life". in Identity in the Information Society 2008, Volume 1, Issue 1, pp 155-172. accessed March 17, 2014. DOI: 10.1007/s12394-009-0008-4

THE ONLINE AUTHORSHIP CASE STUDY: SOCIAL MEDIA

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DESIGN METHOD .

Online social media is able to track both passive and active participation of its digital platform citizens to allow ample data collection in identifying who we are. The passive data extracted act as the unconsious authorship of self identity, while the active participation in generating content for the platform become authorship through lifelogging, a process of creating a curated identity. In combination, the passive and active data produced by social media generates a digital identity that is both curated and uncurated - in other words, how we see ourselves to be and who we are according to our previous actions.

Browsers of online social media platforms have limited access and in majority of the cases are only able to view public content produced by others. They act as tourists, observing other's social behavior online and not contributing data on their own. Without signing up or creating profiles, they don't exist as citizens of the platform, but treated as visitors to the site. Because of the lack of identification, these users are able to view public data while having their actions be anonymous.

BROWSER

Active members in online social media are the majority population and exhibit the average user behavior of its digital platform citizens. These citizens actively publicise personal information to take full advantage of the services offered by the social media platforms. By creating an account and beginning to build their online activity, active users are essentially "born" into the digital world. It is from this point their online actions will start to define their online personality, history and preference that follows them wherever they go online.

ACTIVE MEMBER

Heavily connected users of online social media are well networked and well advertised digital platform citizens. Their identity and all the data that follows their digital footprint are well publicised for maximum exposure to obtain as much followers as possible. The popularity gained through their subscribed or followed population act as an accountable numeric value as to how valuable they are as a digital citizen. This is the unfortunate side of digitally identifying persons, as they are given numeric values and hierarchies making certain citizens more valuable on paper than others. To increase this value, heavily connected users broadcast their stream of personal history or content throughout multiple online platforms. This action (cross-pollination between platform content) attempts to capture as much of the digital population available in each platform they participate in.

HEAVILY CONNECTED

ALPHA USER

With enough followers or subscribers amassed, alpha users become online social media leaders. Their activities are closely monitored and discussed, and they become celebrities of the online world. Due to their ability to reach a wide audience of followers, their lifestyle choices and actions become Internet trending behaviours. Alpha users of online social media take advantage of this and use their online identity as a business venture - offering advertising, endorsement, and partnership opportunities with other marketers and industry leaders.

THE ONLINE AUTHORSHIP CASE STUDY: SOCIAL MEDIA

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DESIGN METHOD .

Authorship in the online world is made possible thanks to advancement in digital footprint acquisition technologies. The ability to build each and every individual digital platform citizen a traceable history log, brings forth the notion of responsibility or ownership to online content. Having a publicized user history encouraged digital platform citizens to curate and carefully craft their content, as it will follow the user in their online activities throughout the Internet. Online social media platforms take advantage of this by providing digital platform citizens an easy portal in which to publish their personal history, thoughts, ideals and achievements - everything from the mundane to major events in their lives. Facebook, Instagram and Twitter are some of the major online social media platforms that offer these easy portals to authoring online content for its citizens. The social media platforms Facebook, Instagram and Twitter encourage authorship, and more importantly serve to fill the demand for unique online social activities.

a) The Facebook Wall
The Facebook wall shows almost all online social engagements the user chooses to make public. From the events they attended - to the restaurants they most frequent, all becomes a part of who they are on Facebook. In being able to select what kind of information and content they publish, the user is taking a conscious decision in curating how they want to be portrayed. What appears to be a a "in the moment" posting of current events, actually becomes a very conscious act of self-curation and identity molding process in defining themselves on the Internet.

b) Instagram Photo History
Instagram offers photo journaling of people's lives. As image based publication of self, users are able to take ownership of what they produce and how it reflects themselves. Through the process of tagging (other users and hash tags) users are able to further curate and author who and how their content is categorized and publicized on the Internet.

c) Twitter's immediate broadcasting
The unique behaviour that Twitter allows over other social media platforms is the immediacy or live connection and communication users are able to obtain in authoring their online content. When a post is made, it is time logged and immediately broadcasted to followers of the user. This programming enables followers to engage with the author in real time - encouraging further

engagement and offering intimate level of connectivity with one another. This makes the distance between author and reader become smaller, creating an interactive experience that does not alienate the reader. Furthermore, this type of virtual environment encourages a more conversational interaction between the reader and the author.

INTERNET AS THE DIGITAL PUBLIC REALM

The traditional physical understanding of public realm was able to accommodate the needs of the public realm, as it gave a physical safe haven for public conversation and display. Ideals and cultural exchange occurred frequently and freely, but it was very much dependent on strangers actually physically interacting with one another.

Today, this phenomenon occurs within a community of 3 billion people at lightning speeds, with a cultural diversity that represents 40% of the world population thanks to growing use of the Internet and online digital platforms. Online platforms such as reddit, YouTube, or Facebook, fosters online community activities and exposure of content to span globally. It is designed to facilitate flexible, accessible and widely available opportunities for being viewed and viewing others. Posting, sharing and viewing content can be done remotely from a mobile device, all in a matter of seconds. Just on YouTube, 100 hours of video is uploaded every minute around the world.

It is with these growing evidence of hyper inflated rates of community, exchange, and authorship evident in online activities, that I propose the Internet as a formidable newly emerging public realm. But, how does the traditional physical notion of public realm differ from the digital?

Although the definition of public realm is satisfied by the designs of online platforms and its citizens, a physical public realm presents a stark difference: the difference of time. A physical public realm is tangible, and represents a commitment towards preserving the public sanctity of space. To designate a space for the public realm is expensive, and a significant amount of demand or outcry is needed and/or sustained for a public realm to be built into a physical space. On the other hand, public realm as "space" on the Internet is cheap, fleeting and sometimes even temporary.

But, this does not necessarily have to be a disadvantage, it is this very nature of the online public realm - being cheap, fleeting, and temporary - that provides an opportunity for bombardment of public realms (community, exchange, and authorship) to emerge all over the Internet. Furthermore, since online digital platforms generate and store personal digital footprints (both passive and active) as live feed data, the digital public realm is able to reflect or capture the transitory or "fluid" like nature of the given social/economic climate. Mayer-Schonberger and Cukier supports this idea by stating that "data is no longer regarded as static or stale,

whose usefulness is finished once the purpose for which it was collected was achieved. Rather, data is a raw material of business, a vital economic input, used to create a new form of economic value." [1] **The key difference then, between digital and physical public realms, is that digital public realm is able to capture live, social and cultural understanding of context through data mapping. Perhaps, the ability to produce live digital mapping of social and cultural data offers an opportunity to benefit the designing of build environments?**

I would like to answer this question with yet another one: what are the difficulties that architects and designers suffer from when designing an empathetic or responsive public space in contemporary design practice? I propose this question with Dimmer's statement in mind: "public space is not a passive container or theatre stage. It is a material product, whose relations and interactions dialectically constitute its functions and meanings."[2] The difficulties to this is that a physical landscape, a direct response to the shifting "fluidity" of its occupants social and cultural climate is the lack of complexity or flexibility in an affixed or static design. Dell articulates this beautifully by stating: "form arrives too late. This is because our activity is always faster than the form."[3] As the capacity for public social and cultural relativity of a public space diminishes, so does its relevance and intention of being a public realm, as it ultimately alienates its occupants.

1 Viktor, Mayer-Schonberger, Kenneth Cukier. " Big Data: A Revolution that Will Transform how We Live, Work, and Think". Massachusetts: Houghton Mifflin Harcourt, 2013.

2 Christian Dimmer. "Urban Spaces in Japan: Cultural and Social Perspectives". London: Routledge, 2012.

3 Dell Christopher, "REPLAY CITY : Improvisation als urbane Praxis". Berlin: Jovis Verlag GmbH, 2011.

DIGITAL-
SCAPES.
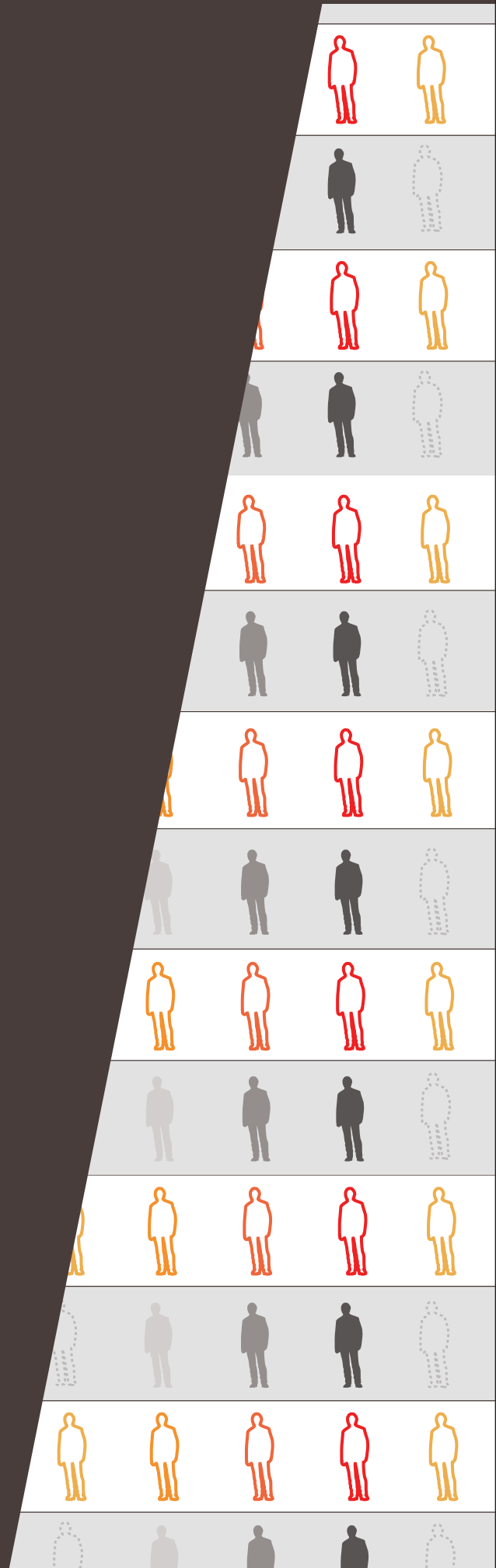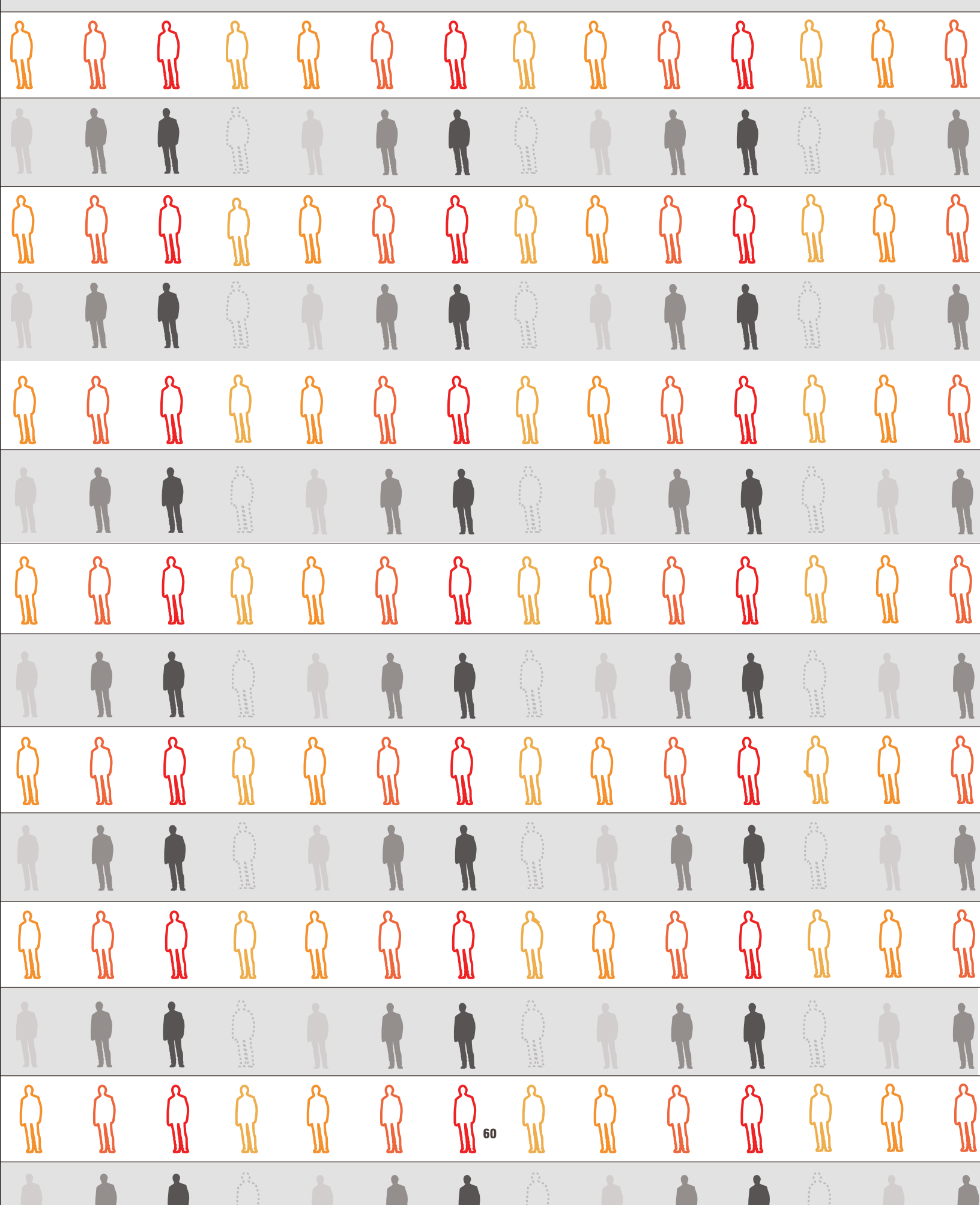
FORMING DIGITALSCAPES

As an architect, how then should these data clouds generated by digital platforms and its citizens be integrated into design thinking? I propose that each cloud of relevant data, be identified as a layer. The layer contains a live tracking and morphing landscape of data tied to each individual within a space. Each layer of information becomes a representation of POIs (Point Of Interaction) at its given time. As groupings of these layers thicken to become relationships, the presentation of data forms a *digitalscape*.

The digitalscape is unique in that the information is dynamic and ever changing. It is a non-static flow of information about the topography of social behaviors. It is a digital contextual information of the people - their cultural behavior, history of interaction, economical information, etc - all contributing as layers that are valuable digital contextual information. Each digitalscape represent direct reflective data generated by the users' behaviour, thus forming a direct link between the users of the space and its designers.

These digitalscapes should not only be understood, but integrated into the evaluation of envisioning architectural design within the context. Much like traditional architectural layers of context such as: circulation, vegetation and solid/void relationships, so must digitalscape layers be part of this architectural vocabulary.

These digitalscapes must be understood as a continually fluid and dynamic information, not addressing information frozen in time, but an ongoing live representation of the collective community, exchange and authorship of both macro scale (communal trending data) and micro scale (individual personal data).

These digital layers can be a powerful tool if given a fully public context, and not within a private building - maximizing the accessibility, accuracy and frequency of its data. It becomes a direct representation of not only the social and cultural climate of the occupants as a whole, but the weight of the different parties involved in the context.

The digitalscapes provide architecture an opportunity to identify and respond to a dynamic nature of its occupants, and essentially grow with its citizens, a truly living architecture.

DIGITALSCAPES
Thanks to the data mining technologies, there are many layers of data that can be used as design analysis.

The information is extremely valuable as it allows micro (each individual) to macro (general trend) clouds of information.

SITE IN QUESTION

PHYSICALSCAPES
Traditional layers of architectural analysis of context that govern design thinking.

ESSAY . CASE STUDY . CONCLUSION .
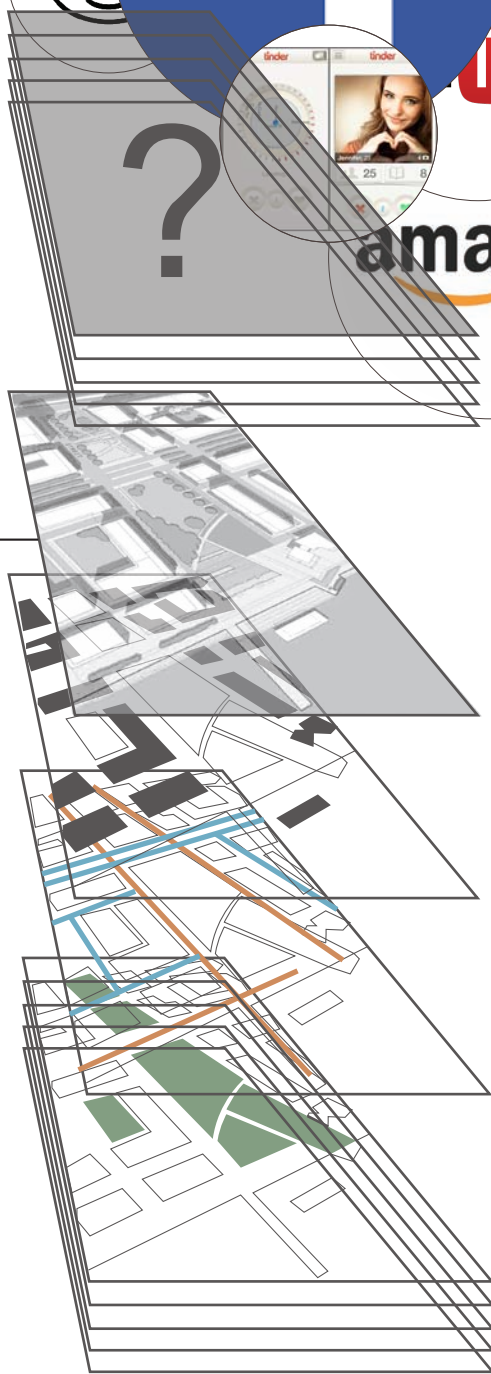
DUNDAS SQUARE CASE STUDY

To illustrate the architectural opportunities that digitalscapes might unlock in the physical space, a popular urban square will be used as an example. Dundas Square, being one of Toronto's public realm centers, is ideal for evaluating how understanding its digitalscape might inform designers during the design process. First, the traditional layers of a physical context are mapped, then using Instagram and Yelp as examples of digitalscapes, the chapter examines how digital data can enrich the contextual understanding of Dundas Square.

DUNDAS SQ. TRADITIONAL PHYSICAL ANALYSIS DATA	**63-64**
THE PHYSICAL LAYERS OF UNDERSTANDING CONTEXT .	
DUNDAS SQ. INSTAGRAM DATA	**65-76**
DIGITAL LAYERS WITHIN . ABSTRACT DIAGRAM OF DIGITALSCAPE .	
DUNDAS SQ. YELP DATA	**77-88**
DIGITAL LAYERS WITHIN . ABSTRACT DIAGRAM OF DIGITALSCAPE .	

?

DIGITALSCAPES

DUNDAS SQUARE

PHYSICALSCAPES
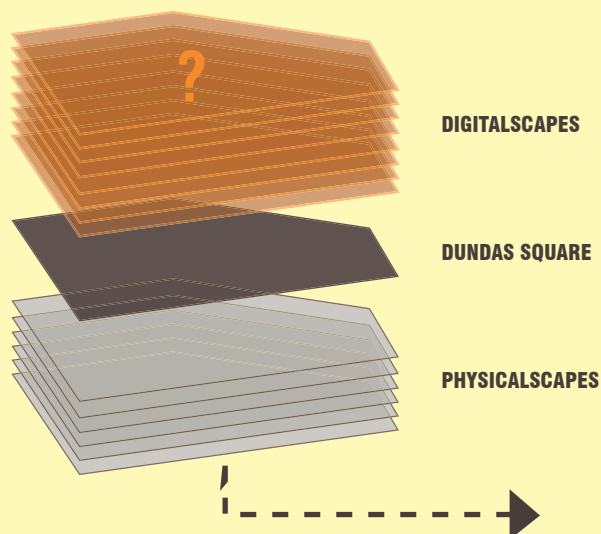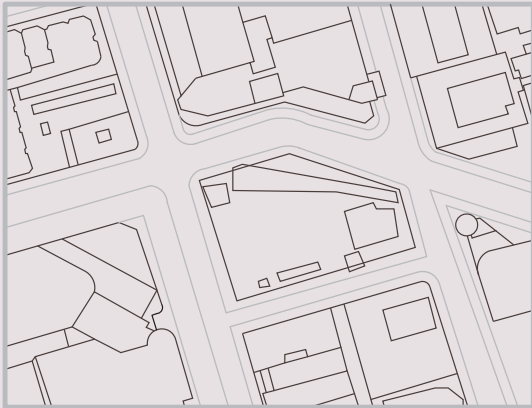
Dundas Square vectors
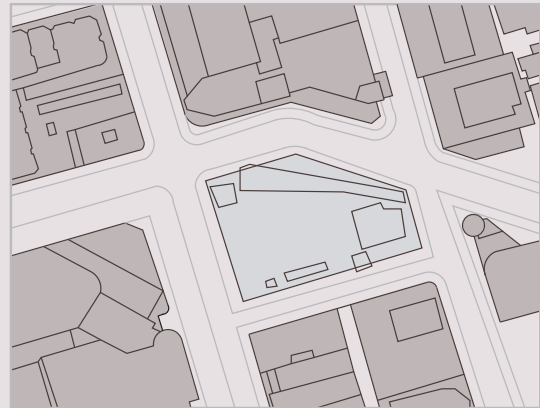
Dundas Square solid/void

Dundas Square surrounding heights
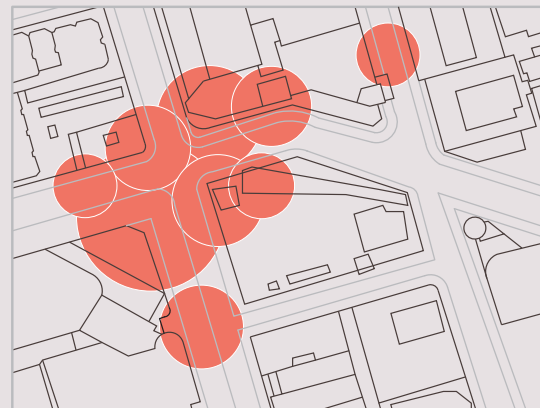
Heavy pedestrian traffic zones
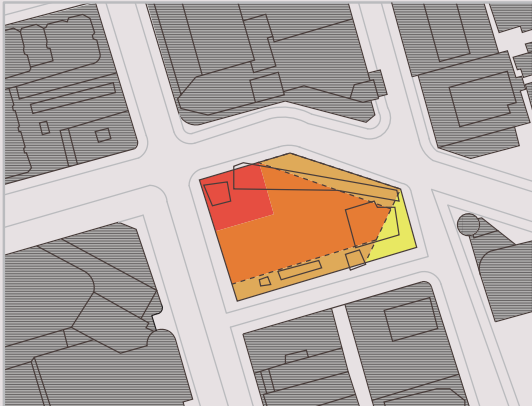
Dundas Square level of exposure
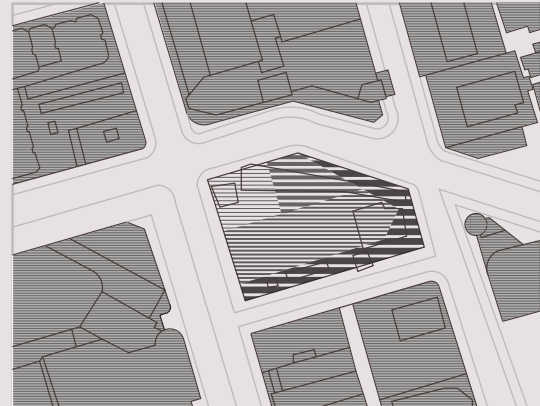
Types of activities within Dundas Square

Dundas Square public transportation routes
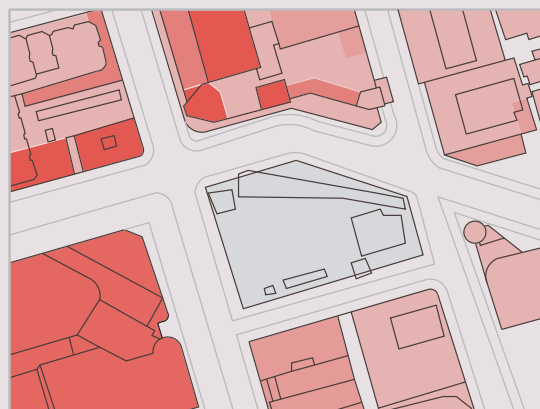
Dundas Square realestate values

DUNDAS SQ. INSTAGRAM DATA

INTRODUCTION . DIGITAL LAYERS WITHIN . CONCLUSION .

Layers of Instagram

A — live track of photos (time log)

B — photo archives

C — types of users

D — user trends (#, events, locations)
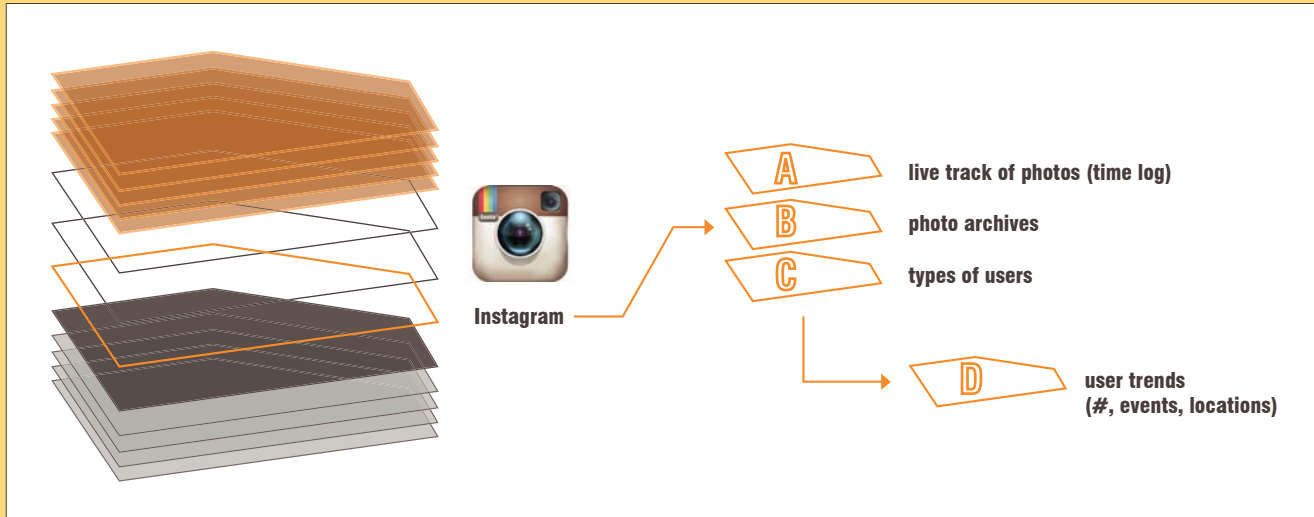
Instagram

fig. 9 Instagram digitalscape layers

How the layers are encoded

ydsquare
Yonge-Dundas Sq...   FOLLOW

26 likes   7w

ydsquare We're enjoying #tociderfest today at the square! Come back at 6:30pm for the second session of the evening! Cheers! @tociderfest

elifincegul @anilkaymaz

anilkaymaz O ne lo yonge dundasra nabiolar @elifincegul

Add a comment...

fig. 10 Dundas Square (@ydsquare) Instagram post

DUNDAS SQUARE TAG SAMPLES: LOCATIONS
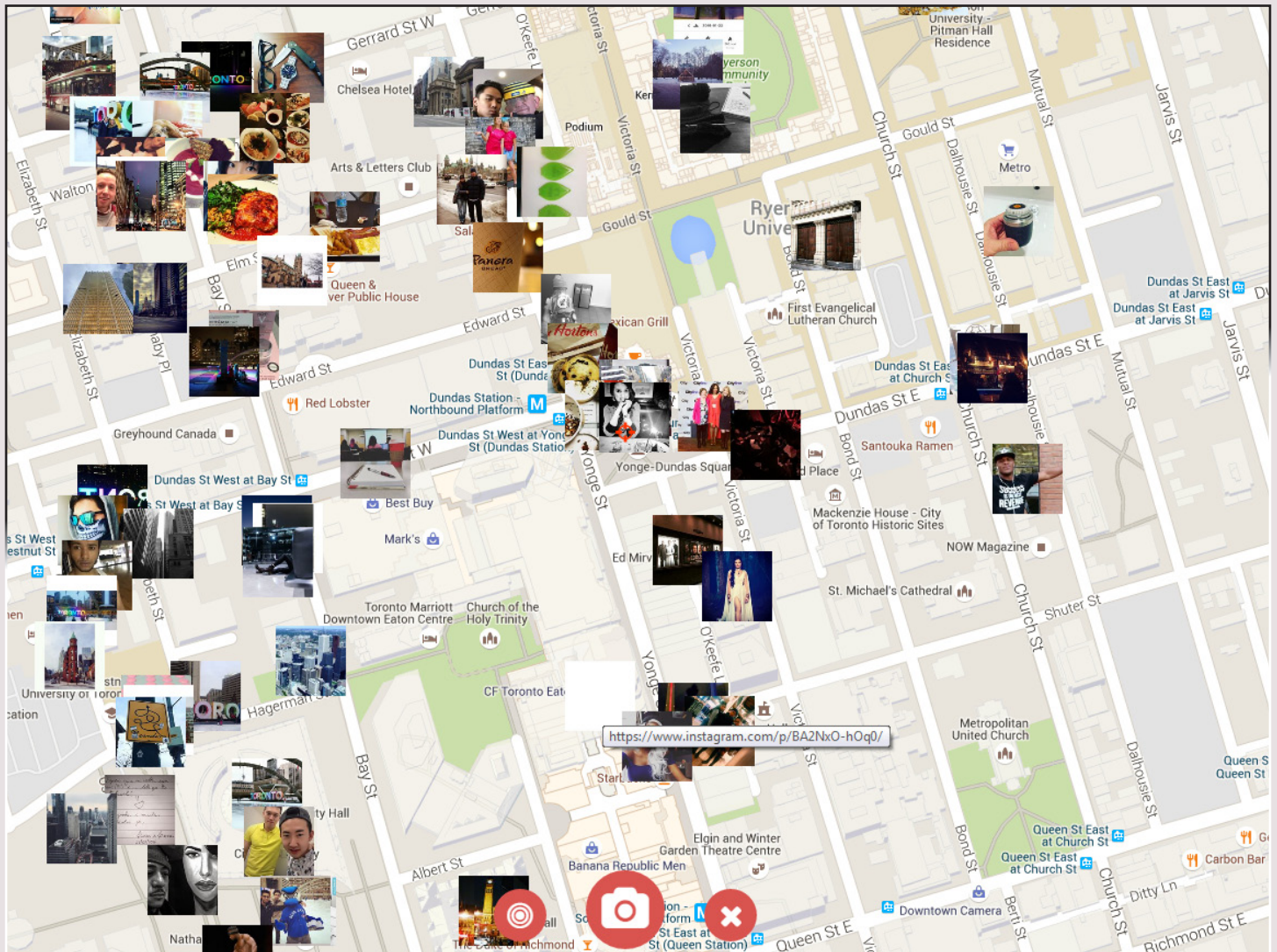
Method for Dundas Square Instagram sampling
To sample Instagram data of Dundas Square, the application
Instmap was used to gps locate each photo posted near Dundas
Square each day. The pictures and its locations were closely tracked
for a week and complied to a 15 posts per day sample size to start
mapping Instagram posts for information collecting.

DUNDAS SQ. INSTAGRAM DATA

INSTAGRAM DUNDAS SQUARE TAG SAMPLES
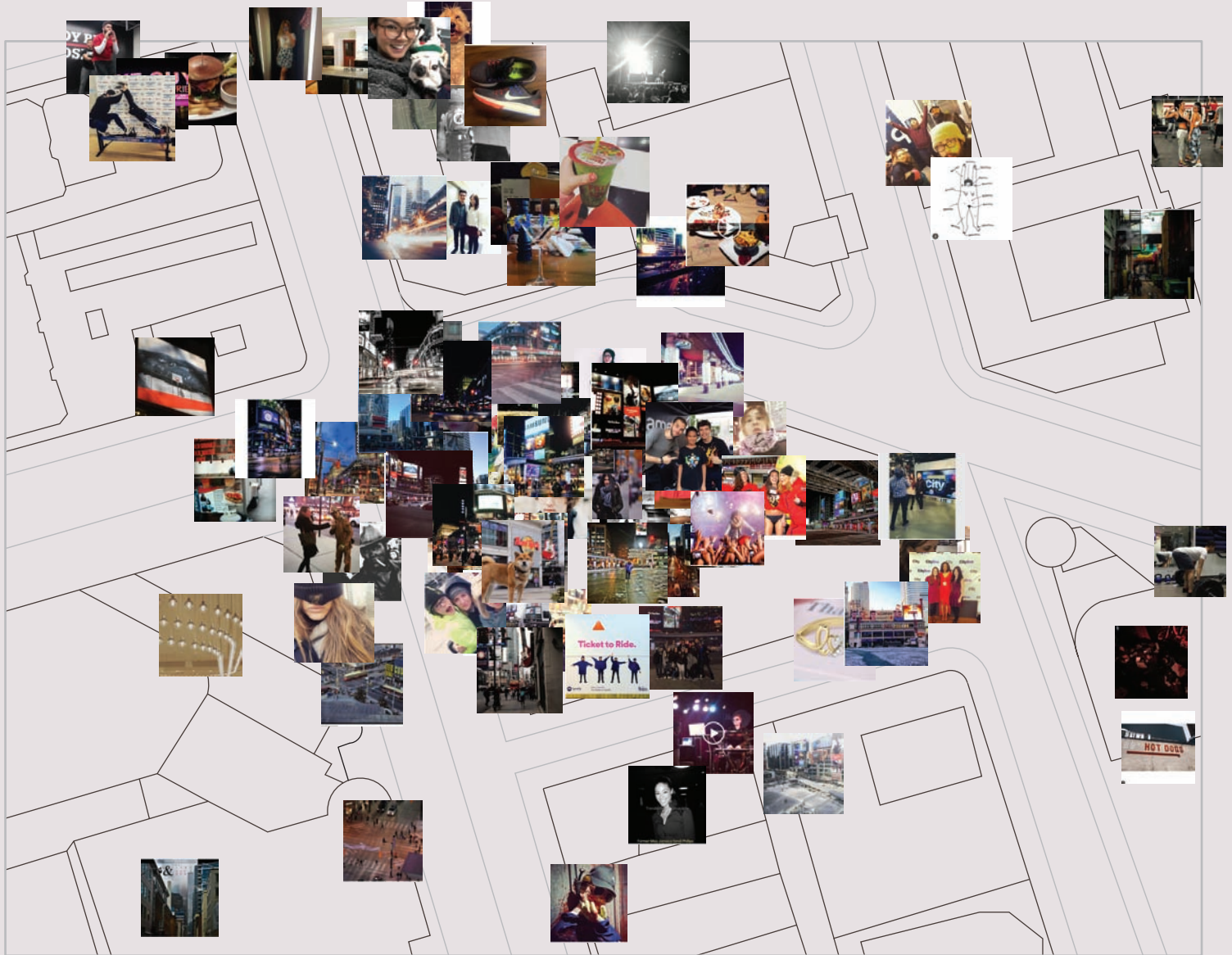
ONE WEEK OF DUNDAS SQUARE TAG SAMPLES

MONDAY
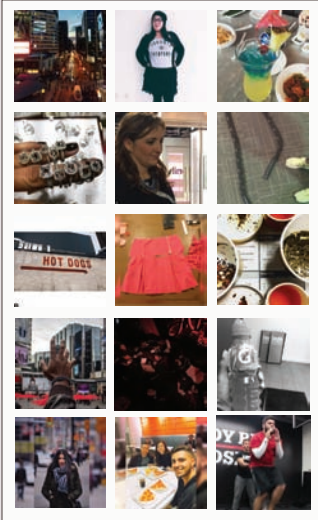
TUESDAY
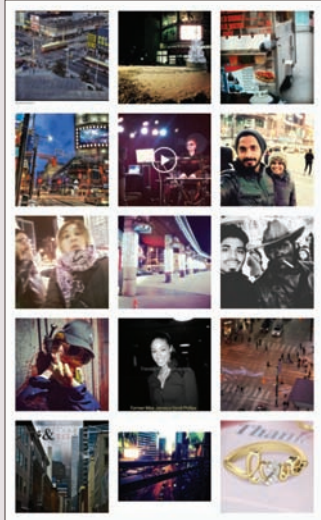
WEDNESDAY
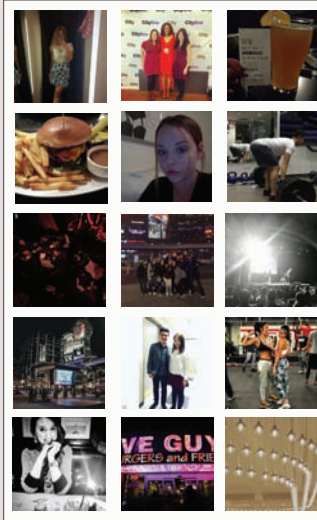
THURSDAY

FRIDAY
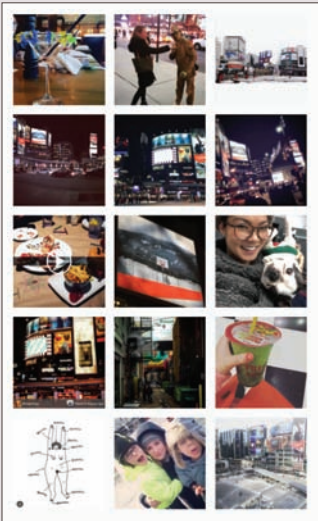
SATURDAY

SUNDAY
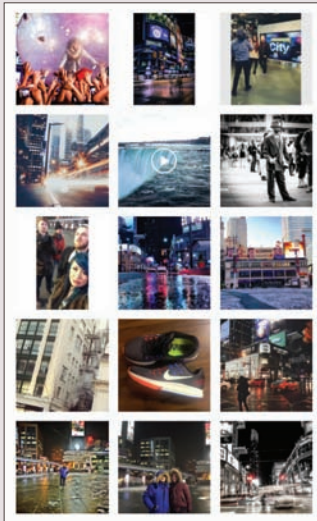
A | Time logging provides time and date of the photos taken. This allows photographs to be tracked - providing accurate information as to when certain events or crowd involvement happened. Time logging also allows photo archives to be organized chronologically, helping us understand what kind of events occurred and when.

DUNDAS SQ. INSTAGRAM DATA

INTRODUCTION . DIGITAL LAYERS WITHIN . CONCLUSION .

Instagram Dundas Square tags - number of likes (Avg. per day)

42	24	5	8	6	19
built environment	personal	food	moderated programming	casual encounter	advertising

DUNDAS SQUARE TAG SAMPLES: TYPES OF POSTINGS

DUNDAS SQUARE TAG SAMPLES: TYPES OF POSTINGS

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

SUNDAY
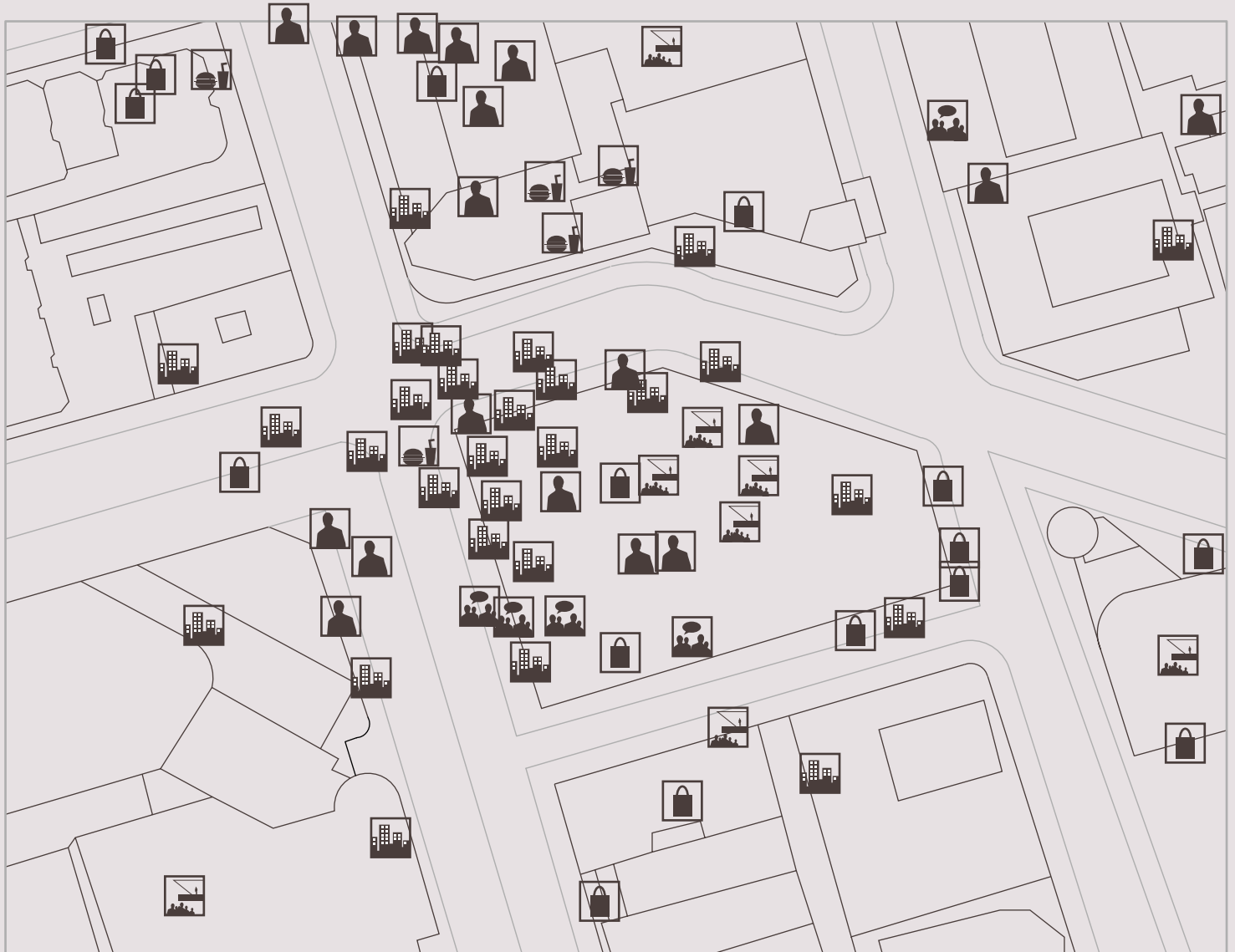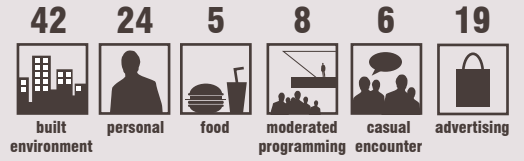
B   From the Dundas Square official Instagram account (@ydsquare) and tags from other users (ex:ample: #dundassquare), an archive of photos of its occupants can be collected. These photos act as photographic evidence of what happened or what currently is happening on Dundas Square. Instagram digital platform citizens of Dundas Square help advertise the space and contribute to building a digital community within Dundas Square.

DUNDAS SQ. INSTAGRAM DATA

INTRODUCTION . DIGITAL LAYERS WITHIN . CONCLUSION .

Instagram Dundas Square tags - population hierarchy

16	67	12	10
0-300 followers	300-500 followers	500-1000 followers	+1000 followers

DUNDAS SQUARE TAG SAMPLES: USER POPULATION

DUNDAS SQUARE TAG SAMPLES: USER POPULATION

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

SUNDAY
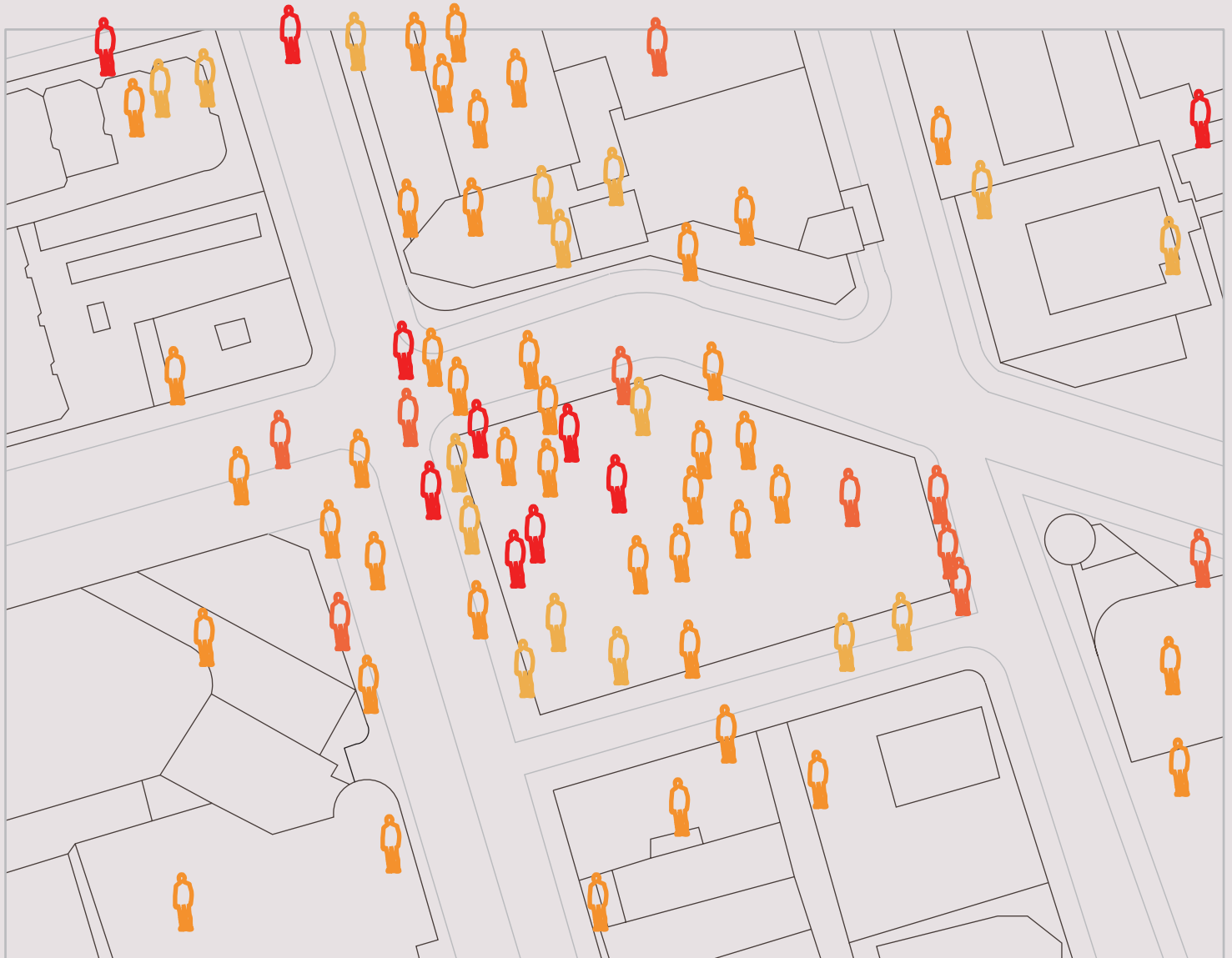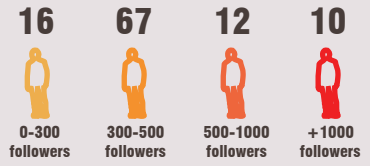
C Tagging users or having them comment provides identification of who was involved in the photos. Through user identification (their photo trends, likes, followers, following), the participant's digital platform citizenship can be determined. Depending on the type of citizen they are, strategic partnerships or outreach can be made for future events and ventures within Dundas Square.

DUNDAS SQ. INSTAGRAM DATA

INTRODUCTION . DIGITAL LAYERS WITHIN . CONCLUSION .

Instagram Dundas Square tags - number of likes (Avg. per day)

22	68	12
<5 likes	5-100 likes	+100 likes

INSTAGRAM DUNDAS SQUARE TAG SAMPLES
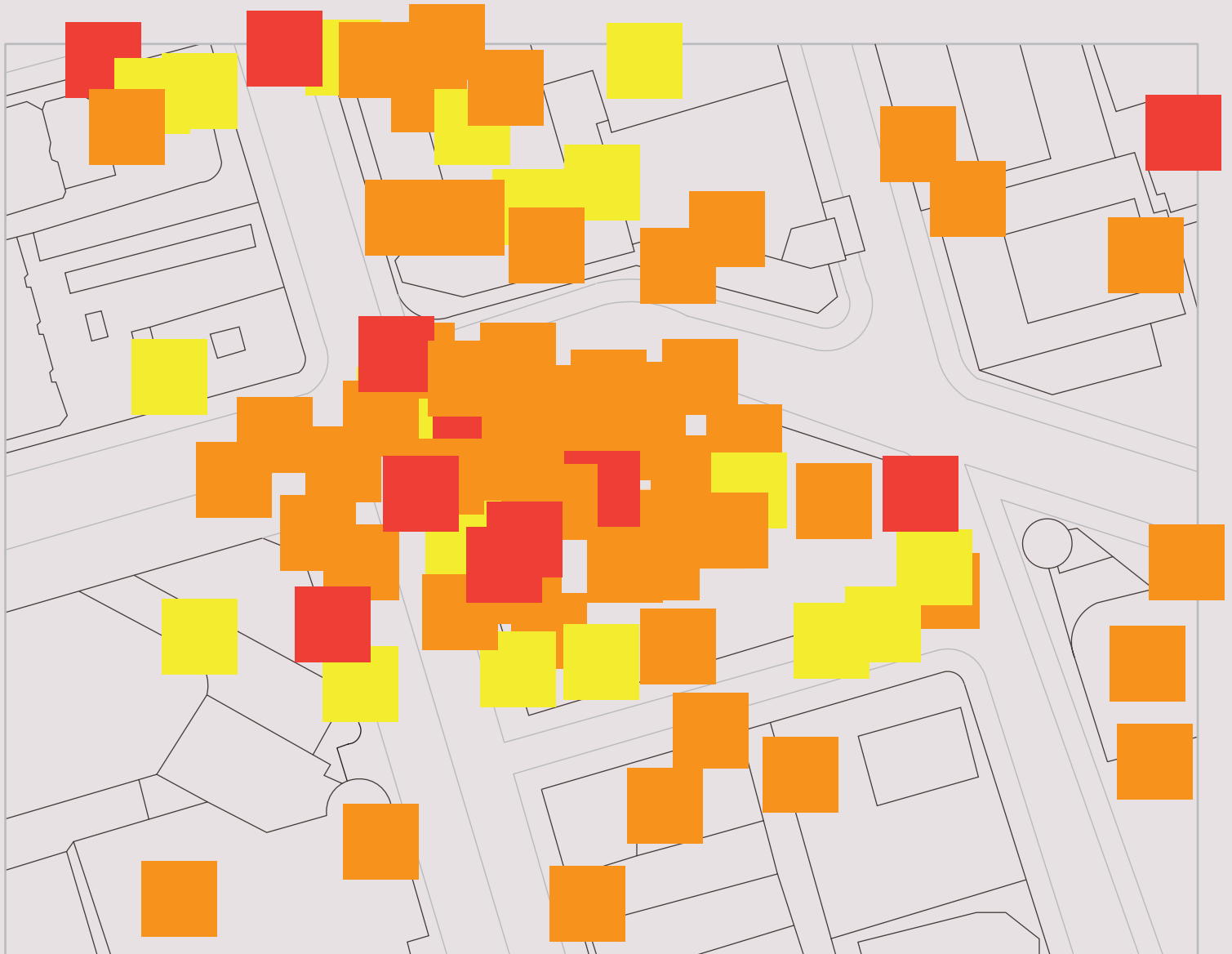
DUNDAS SQUARE TAG SAMPLES: # OF LIKES

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

SUNDAY
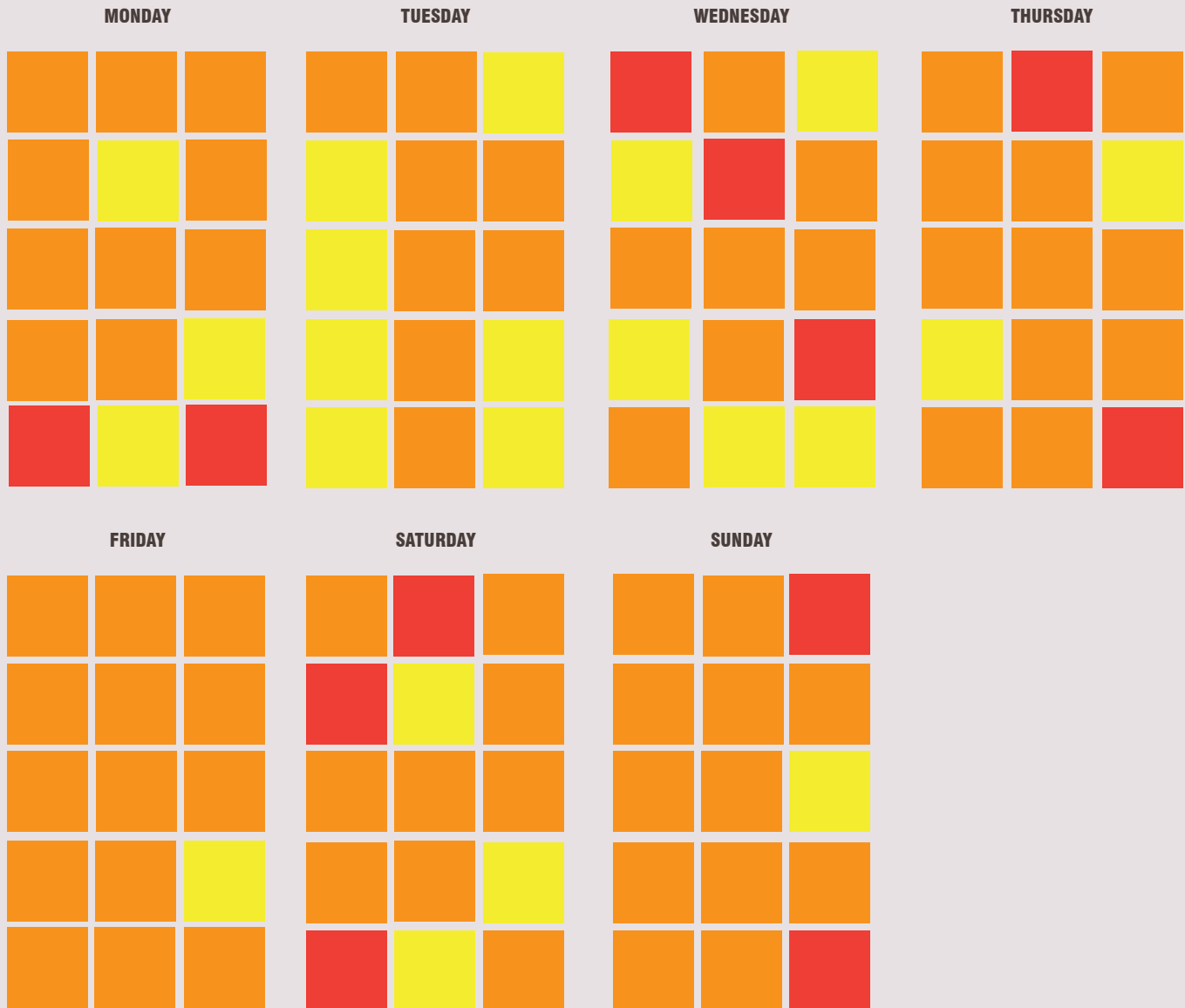
D | Once the individual users are tracked and analyzed, they can be grouped and social/cultural trends can be determined - this serves as an advantageous insight, since it is important for a public space to understand its demographic, and what their interests are in the function of the space. Because the photos and their digital footprints involving Instagram are time logged, it provides valuable live information about current occupants involved (food they enjoy, entertainment interest, events they participated in, etc.). Such community data allows Dundas Square planners to organize accordingly, as it becomes a powerful tool for market analysis.

DUNDAS SQ. INSTAGRAM DATA

INTRODUCTION . DIGITAL LAYERS WITHIN . CONCLUSION .

DUNDAS SQUARE INSTAGRAM LAYERS
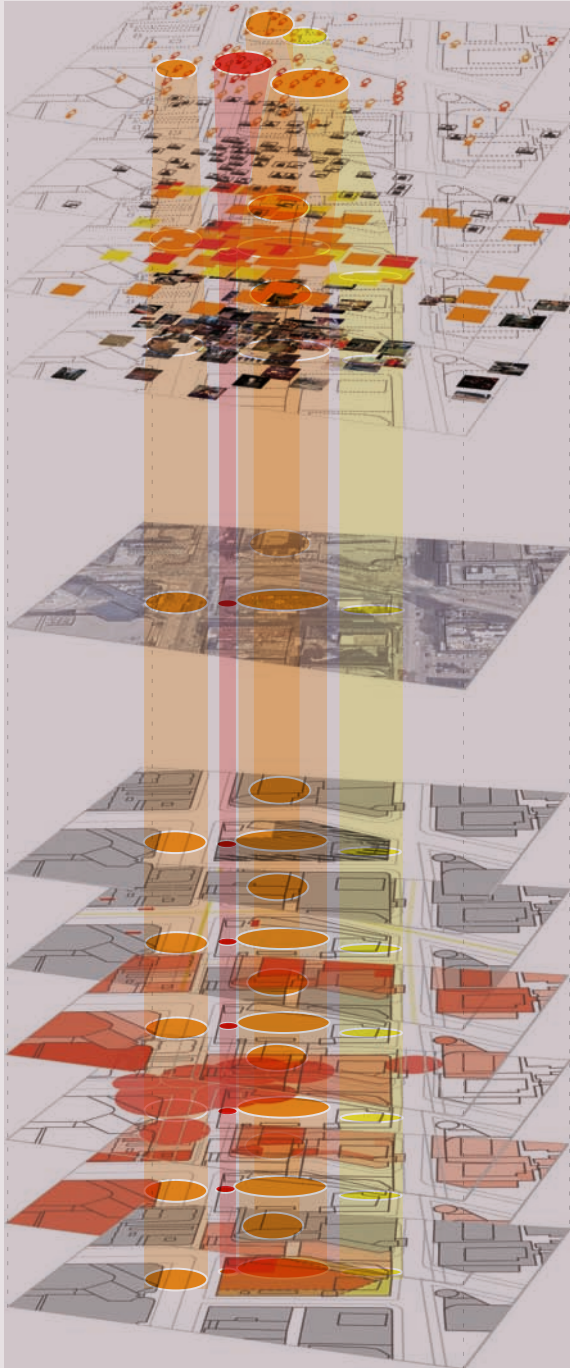
Stacking the layers

Combining Instagram layers with physical layers introduces valuable occupant data that help understand the space through crowd sourcing. Contributing data is generated through occupants, providing insightful behavioral data points to contextual analysis.

Examples of these behavioral data can be seen by combining pedestrian traffic flow with Instagram population determines not only the amount of pedestrian traffic but the type of people that travel along Dundas Square. Personal information about the occupant's preferences, places they have visited and the amount of influence they have can be data mined and mapped to make strategic contextual decisions in design. Combining types of photos taken and high exposure zone analysis can determine the type of attractions that thrive in the context. Once again, stacking these layers provides strategic planning for design, as it utilizes direct occupant behaviours throughout the site.

Stacking these layers must be done with some agenda for contextual insight, as aimlessly layer stacking often produces meaningless information. As shown on the mapping examples, if property values and number of Instagram likes are combined - little correlation exists between the two layers. This makes the stacking of layers a presumptive decision, first needing a hypothesis of the result and perusing to map the data to see if the contextual hypothesis holds true, limiting the stacking of layers to a manual speculative mapping rather than automated mapping analysis. In addition to this flaw, the data points are unfortunately not always accurate, as the location points are determined once the Instagram post is uploaded. The user may choose to upload the photo they've taken once they have moved away from the spot they took the photo, making the location points not always accurate. To limit this inaccuracy, the sample size of the Instagram data points must be large enough to make an average measurement of its data results.

INSTAGRAM VERSUS TRADITIONAL ARCHITECTURE LAYERS
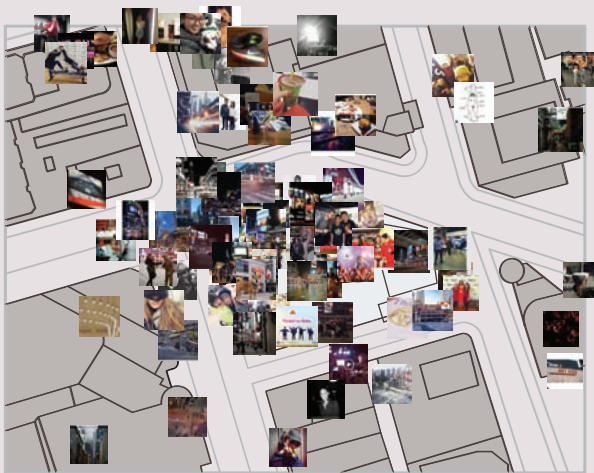
Solid void layer + Instagram photo layer

Pedestrian traffic layer + Instagram user population layer
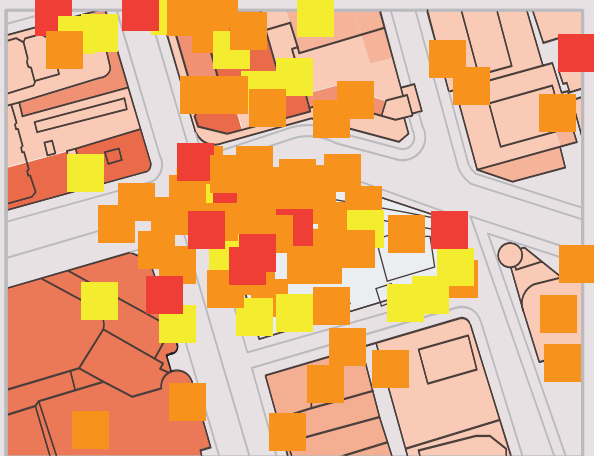
Surrounding realestate values + Instagram # of likes layer

Level of exposure zones + Instagram types of photos layer

DUNDAS SQ. YELP DATA

INTRODUCTION . DIGITAL LAYERS WITHIN .   CONCLUSION .

Layers of Yelp
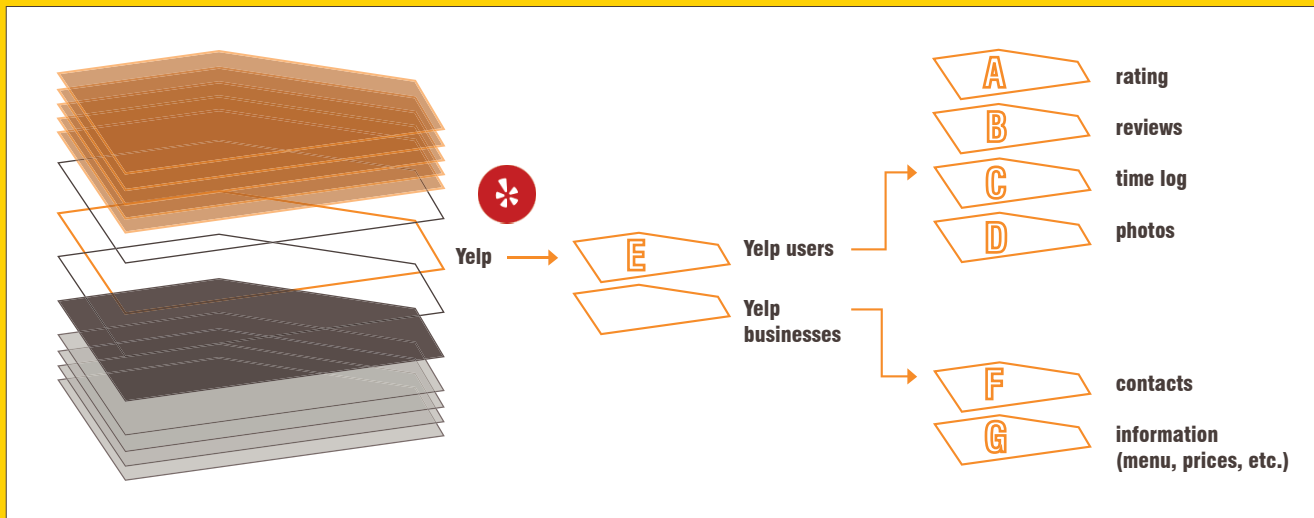
fig. 11 Yelp digitalscape layers

How the layers are encoded
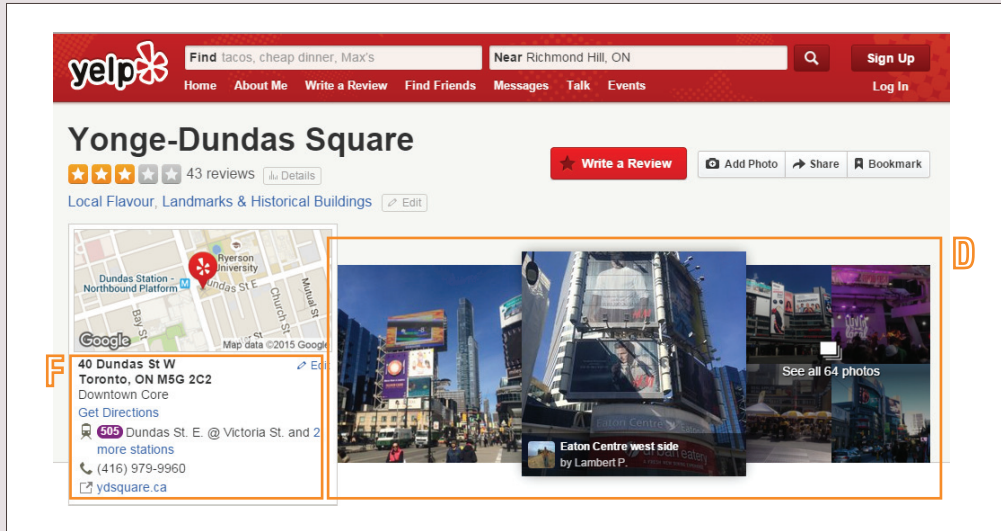
fig. 12 Yelp Dundas Square front page
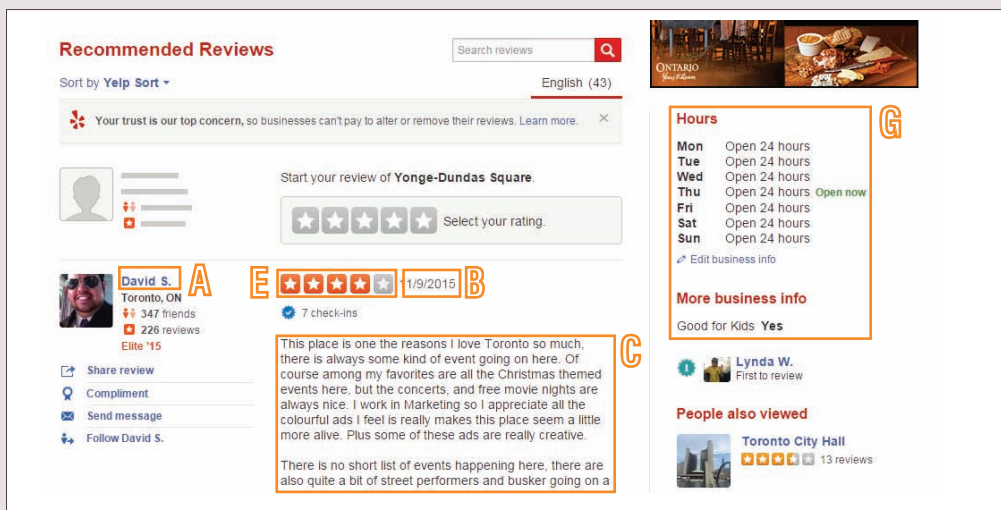
fig. 13 Yelp Dundas Square review page

DUNDAS SQ. YELP DATA

INTRODUCTION . DIGITAL LAYERS WITHIN . CONCLUSION .

YELP SAMPLE DATA LOCATIONS
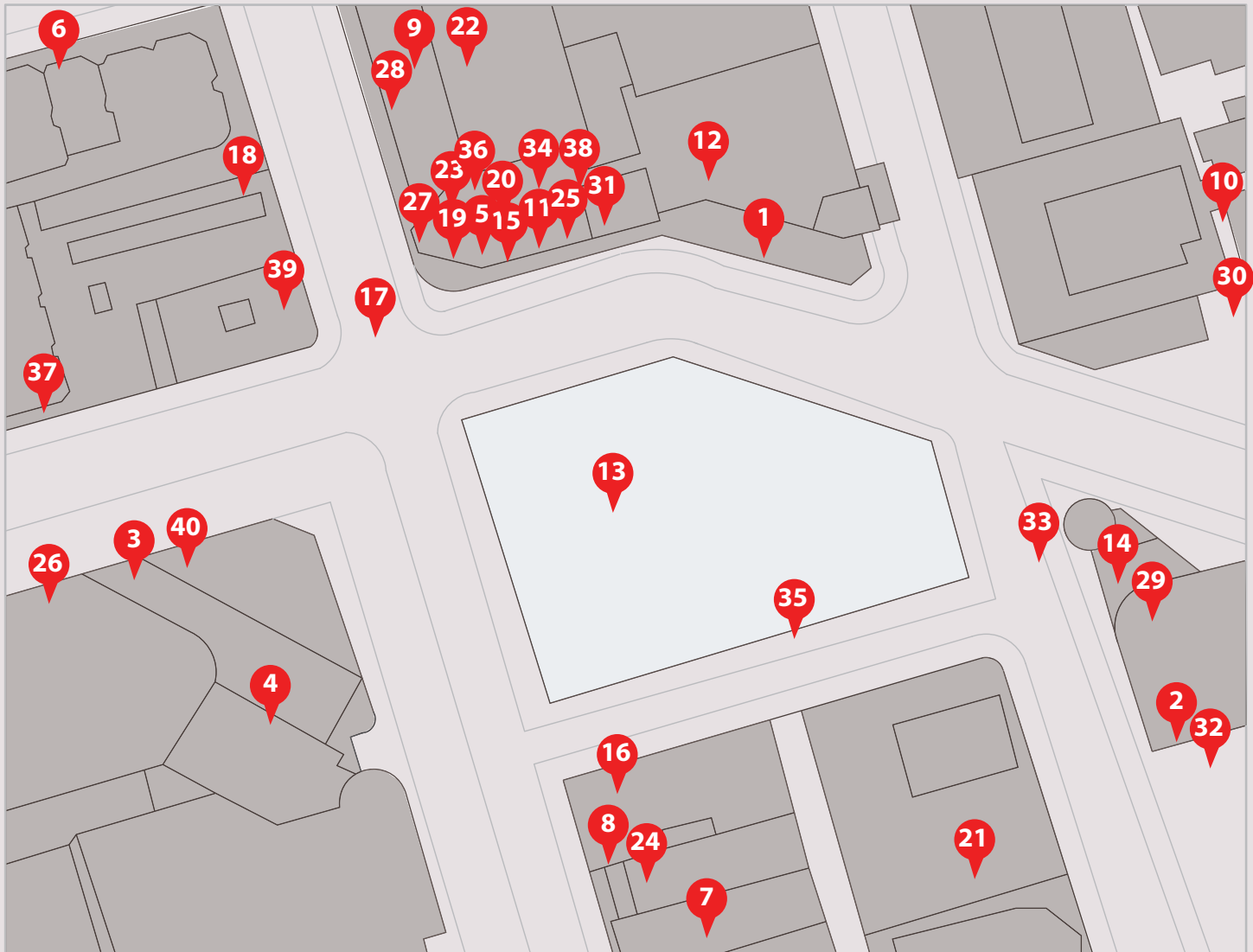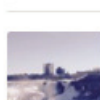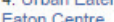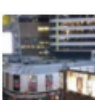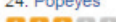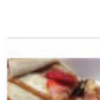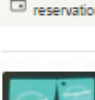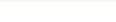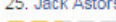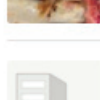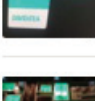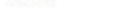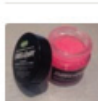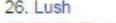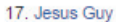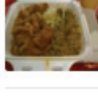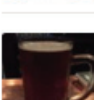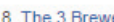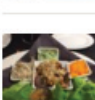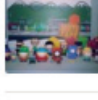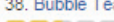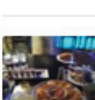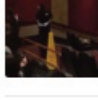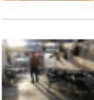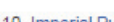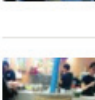
Yelp Dundas Square - 40 sample listing locations

Yelp location pins

Method for Dundas Square Yelp sampling
To sample Yelp data of Dundas Square, their map feature was used to locate their top 5 pages of their most recent pins within Dundas square. The sample size came out to be 40 pins, with large variety of categories (food, attractions, businesses, cafe, etc.) and wide range of review ratings. This sample size was used to map and analyze the different physical and digital information the pins provided.

1. Blaze Fast-Fire'd Pizza
52 reviews
$$ · Pizza, Salad, Gluten-Free

2. The Senator
266 reviews
$$ · Diners, Desserts, Coffee & Tea

3. JOEY Eaton Centre
259 reviews
$$ · Canadian (New), Sports Bars

4. Urban Eatery at the Eaton Centre
52 reviews
$$ · Fast Food

5. Milo's Pita
31 reviews
$ · Middle Eastern

6. Roll Play
103 reviews
$$ · Lounges, Cocktail Bars

This restaurant takes reservations — Find a Table

7. Asian Bowl
69 reviews
$$ · Vietnamese, Thai, Chinese

8. The 3 Brewers
165 reviews
$$ · Pubs, Breweries

9. Five Guys Burgers and Fries
97 reviews
$$ · Burgers, Fast Food

10. Imperial Pub
94 reviews
$$ · Pubs

11. Spring Sushi
136 reviews
$$ · Japanese, Thai, Asian Fusion

12. Jack Astor's Bar & Grill
97 reviews
$$ · Canadian (New), Sports Bars, Burgers

13. Yonge-Dundas Square
45 reviews
Local Flavour, Landmarks & Historical Buildings

14. Milestones Grill & Bar
134 reviews
$$ · Canadian (New)

This restaurant takes reservations — Find a Table

15. DAVIDsTEA
4 reviews
$$ · Coffee & Tea, Tea Rooms

16. Hard Rock Café
61 reviews
$$ · Canadian (New), Burgers, Music Venues

17. Jesus Guy at Dundas Square
27 reviews
Local Flavour

18. The Pickle Barrel
147 reviews
$$ · Delis, Canadian (New)

19. Shark Club Sports Bar & Grill
75 reviews
$$ · Sports Bars, Lounges, Canadian (New)

20. Real Fruit Bubble Tea
13 reviews
$ · Coffee & Tea, Juice Bars & Smoothies

21. Ed Mirvish Theatre
40 reviews
Performing Arts

22. Fit For Life
5 reviews
$ · Sandwiches, Breakfast & Brunch, Canadian (New)

23. Harvey's
7 reviews
$ · Fast Food

24. Popeyes
32 reviews
$ · Chicken Wings, Fast Food

25. Jack Astors
33 reviews
$$ · American (Traditional)

26. Lush
16 reviews
$$ · Cosmetics & Beauty Supply

27. Curry & Co.
6 reviews
$ · Indian, Halal, Pakistani

28. Silver Snail Comic
50 reviews
$$ · Comic Books

29. Cineplex Odeon Yonge & Dundas Cinemas
118 reviews
Cinema

30. Cloud Care Clinics
16 reviews
Walk-in Clinics, Naturopathic/Holistic, Massage Therapy

31. OPA! of Greece Dundas Street
7 reviews
$$ · Greek, Fast Food

32. Jazz Bistro
27 reviews
$$$ · Jazz & Blues, Music Venues, Venues & Event Spaces

33. Queen Tour - Niagara Falls Bus Tours From Toronto
6 reviews
Bus Tours

34. Crepe de licious
1 review
Creperies

35. Cafe Oro
1 review
Coffee & Tea, Sandwiches

36. Saute Rose
4 reviews
Italian

37. MUJI
46 reviews
$$ · Cards & Stationery, Home Decor

38. Bubble Tease
7 reviews
$$ · Coffee & Tea

39. Carribean Queen Metro
5 reviews
$ · Caribbean

40. Kernels Popcorn
3 reviews
$$ · Specialty Food

DUNDAS SQ. YELP DATA

YELP SAMPLE DATA RATINGS
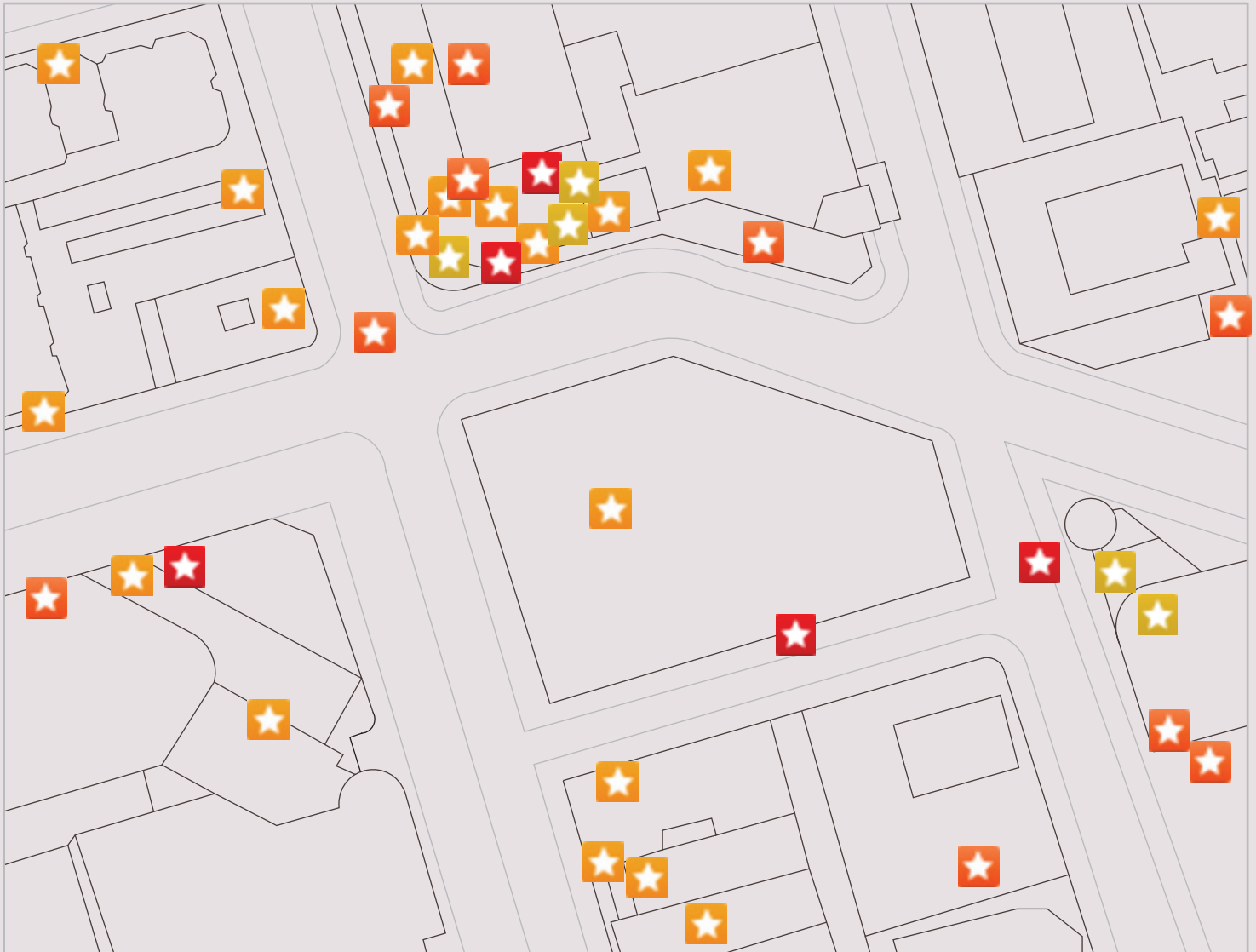
Yelp Dundas Square - 40 sample listing ratings

A | Rating (star ranking system) the listed places on Yelp provides a quick visual way to summarize the overall experience - providing a numeric value to an experience of place, voted by previous occupants. Developing an open-source, community developed rating system provides a fair indication of how occupants feel about the quality of services, activities and events that are offered in the space. members are free to provide whatever rating they feel is appropriate based on their personal experience. Although these ratings are based on individual experience, the numeric summarization allows simple ways to make large scale community comparisons and planning decisions.

Ratings legend

| 1-2.5 stars | 3-3.5 stars | 4-4.5 stars | 5 stars |

YELP SAMPLE DATA REVIEWS

Yelp Dundas Square - 40 sample listing reviews

Overall average reviews

Negative   Positive   Informative / Improvements

Reviews posted by digital platform citizens of Yelp provides detailed account of their experience with the place in question. The review may include personal opinions, suggestions for improvement and/or praise. Business owners, event planners, as well as designers are able to benefit from the reviews as it becomes an archive of feedback and market research. The reviews provide a direct method of communication platform between its users and decision makers. Due to the personal nature of Yelp reviews, they may provide insightful and strategic feedback about the place's design and operations.

DUNDAS SQ. YELP DATA

INTRODUCTION . DIGITAL LAYERS WITHIN .   CONCLUSION .

YELP SAMPLE DATA TIME LOGS
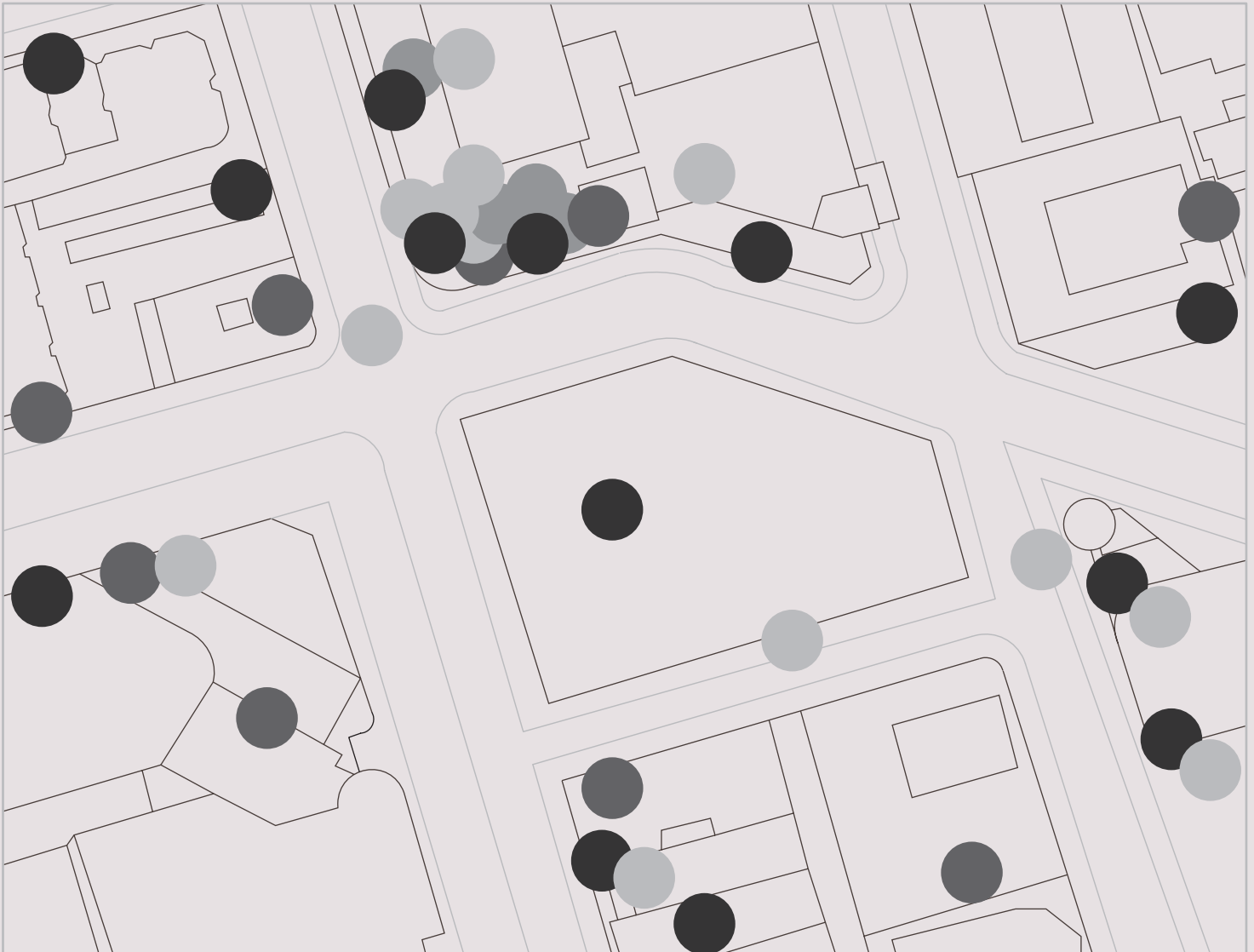
Yelp Dundas Square - 40 sample listing time logs

C   Time logging of check-in times allows identification of traffic or business patterns of the area in question. Check-ins verify that the user has entered the business or space they are reviewing and time logs them to provide chronological pattern information. Collected in masses, the data provides valuable information about peek highs and lows of activity (both pedestrians and businesses) in the area.

Up to date information scale

| > 3 months old | 2-3 months old | 1-2 month old | weeks old |

YELP SAMPLE DATA PHOTOS

100

32 19

13

2

16

110

116 23 84 6

18

119 5 10

94

16

7

2

53

91

28

217 1

79

11

103

50

0

193

52

40

131 64

31

11
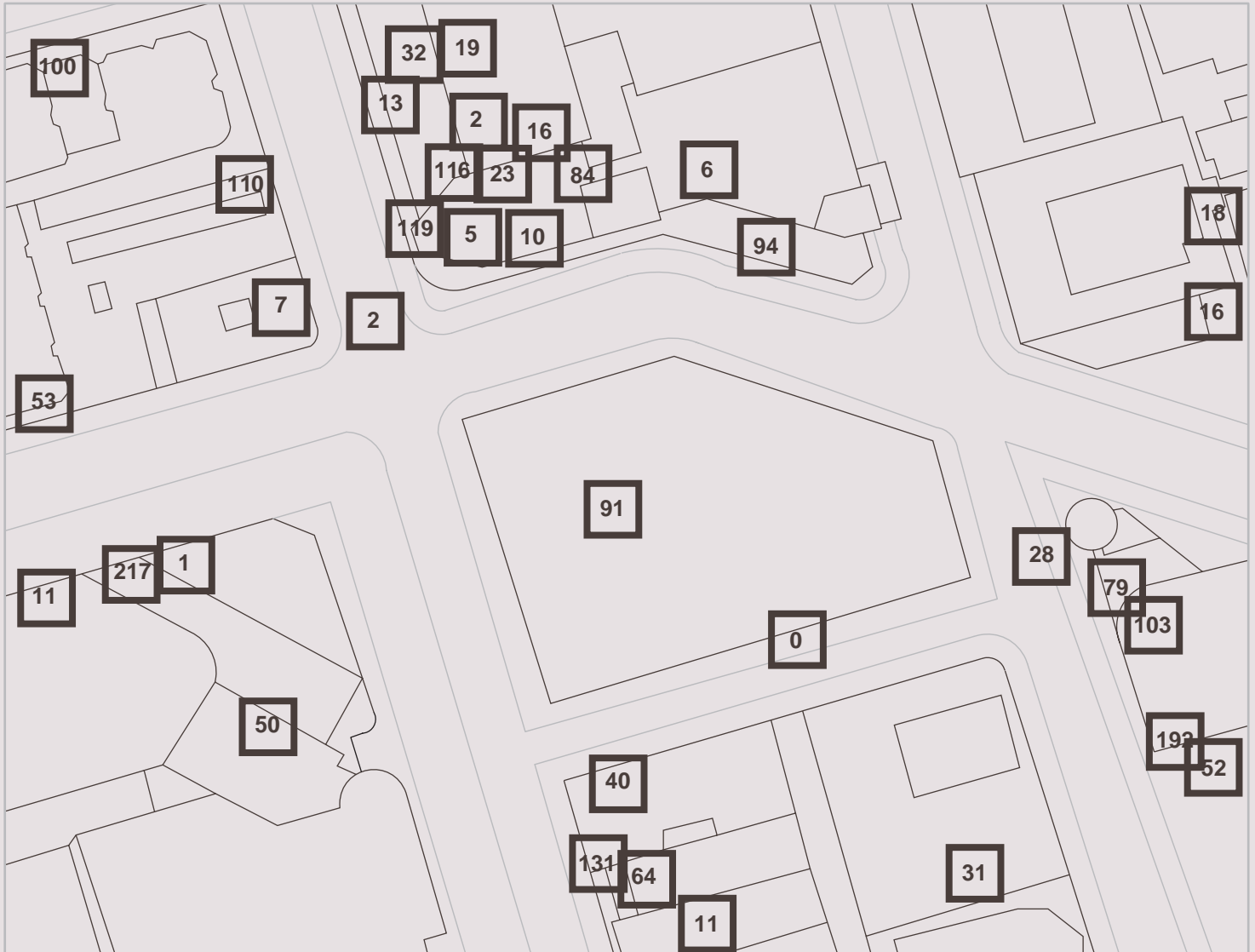
Yelp Dundas Square - 40 sample listing photos

Number of photos in each archives

#

number of photos
submitted

D Photo archives on Yelp act as key components to help browsers form a quick opinion or initial intrigue about places they would like to visit. Since the photo archives of Yelp are made by its participants and customers, there is honesty and credibility to what the photos present. Due to its collective user credibility, it has the power to encourage (free advertising) or discourage the success of the place in question.

DUNDAS SQ. YELP DATA

INTRODUCTION . DIGITAL LAYERS WITHIN .   CONCLUSION .

YELP SAMPLE USER DATA
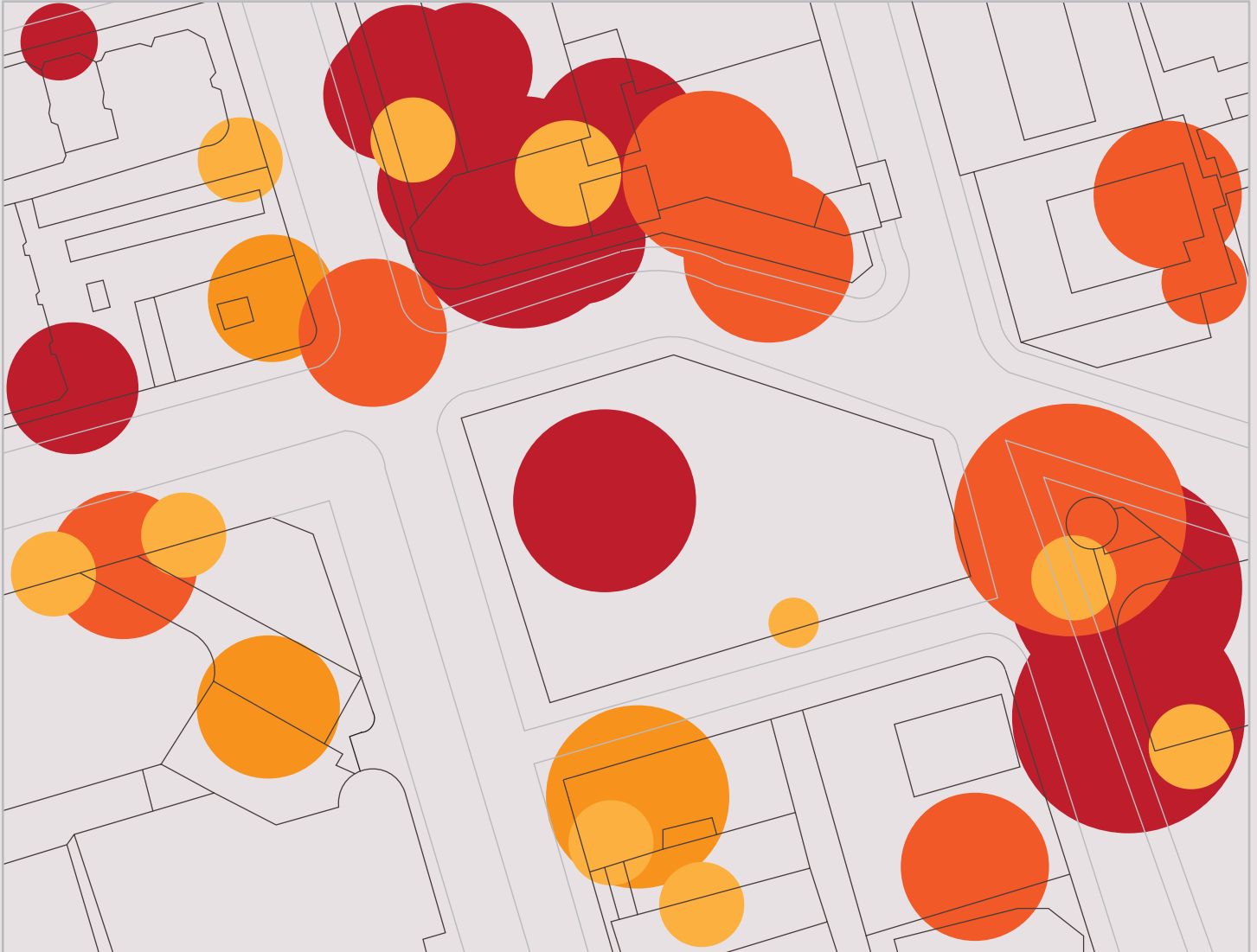
Yelp Dundas Square - 40 sample listing users

Colour scale of average population that input
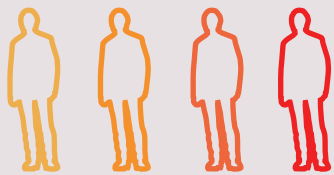
first time visitor   alpha user

Number of reviews
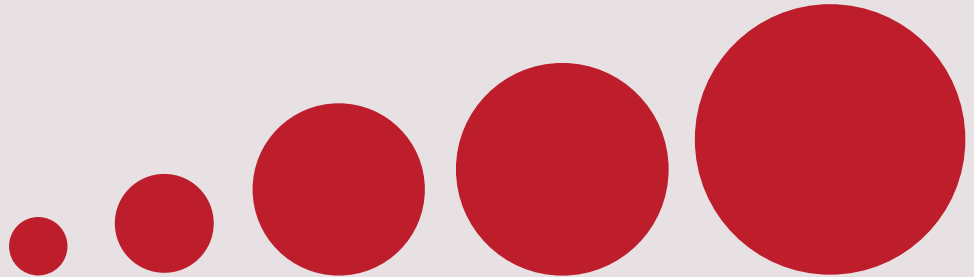
1-5 reviews   5-30 reviews   30-50 reviews   50-100 reviews   + 100 reviews

E Extracting user information allows hierarchy of digital platform citizens to form. Details of the account help verify both the credibility and weight of their contribution. As user's account information consolidates, the data extracted is able to track demographic patterns of who or what type of person participates in what and where. Acting as strategic tool for planning purposes, determining majority demand and interest.

F Contact information provides easily identifiable location data (both physically and digitally) about the place in question. In direct and simply categorized data, the place's address, website, phone number and/or email information is provided to allow quick and direct connection with digital platform citizens of Yelp.

G Information about the place in question varies depending on the type of service, event or business it provides. Common information includes: hours of operation, menus, significant dates, prices of services and products. These quick statistical data help digital platform citizens quickly identify when and what services are available in the area.

DUNDAS SQ. YELP DATA

DUNDAS SQUARE YELP LAYERS
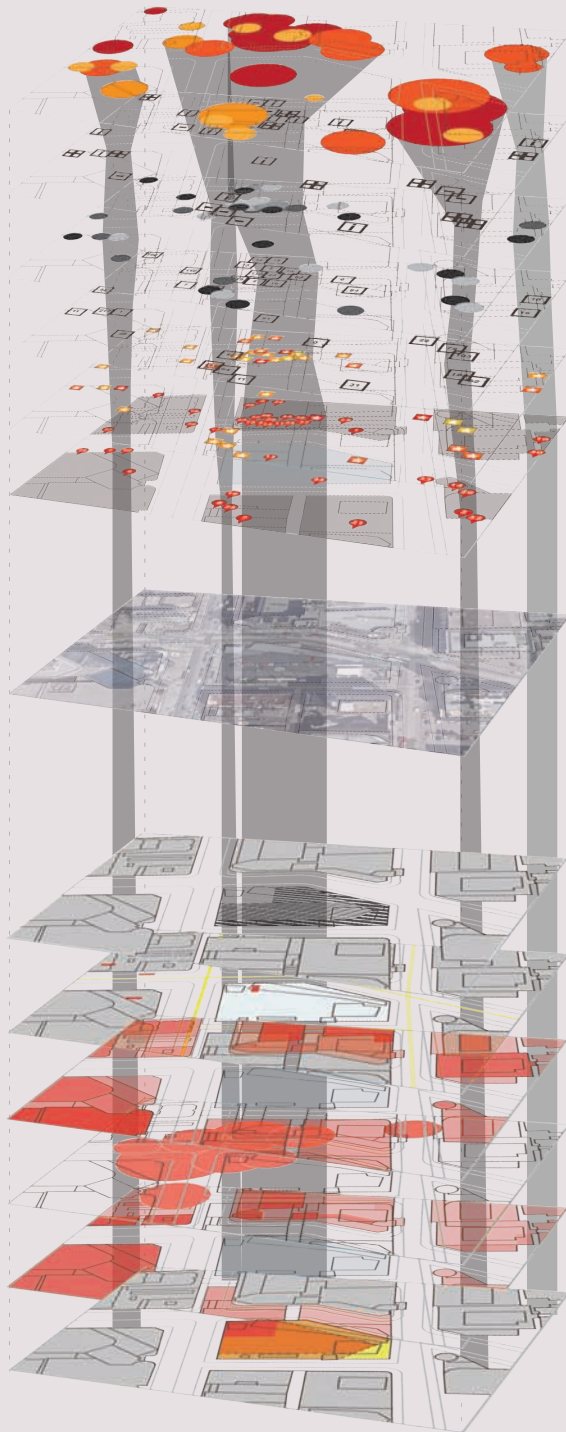
Stacking the Layers
Combining Yelp layers with physical layers produces contextual program analysis with the added benefit of occupant review and statistics. Just like Instagram, the Yelp data crowd sources occupant related contextual information. What makes Yelp special is the ability to gather qualitative information regarding program that exists on the site. Yelp data allows tracking of program available on site unique, as they track the frequency of usage and value of these programs. The detailed review left by the users of the program also allows constructive information to form strategic future planning for the site.

The most obvious benefit in layering Yelp layers with physical layers is understanding program and appropriation. The layering relationships reveal which programs are the most often used, well received, where they are located and the type of occupants they attract. As an example, combining pedestrian traffic with Yelp time log and Yelp users, maps occupant flow and important programmatic density points. According to the frequency of Yelp data retrieval, valuable mapped information can be looked at throughout different time intervals - showing changes in occupant behavior as the day passes. This creates further strategic clarity in programmatic research as it provides dynamic understanding of program throughout the day within the context. Combining land value and Yelp reviews can also act as tools for speculative planning. Able to estimate the rise and fall of property value, as its occupant's review may reflect the program's profitability and/or active usage. The combined data may also give strategic insight as to where to introduce competing or brand new programs to the context, building upon user's reviews and feedback.

Just as in the Instagram layer, the disadvantage of layering Yelp and physical layers is that it is a speculative mapping exercise. Randomly putting different layers together may not combine in a meaningful way. The mapping exercise is done to give conclusive results to a hypothesis, rather than it automatically generating informative layering relationships.

YELP VERSUS TRADITIONAL ARCHITECTURE LAYERS
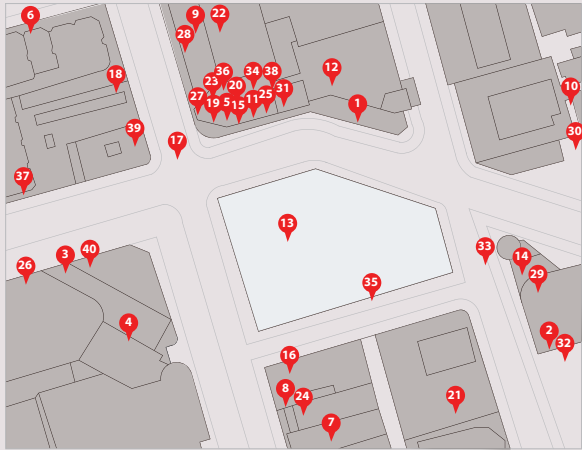
Solid void layer + Yelp pin point layer
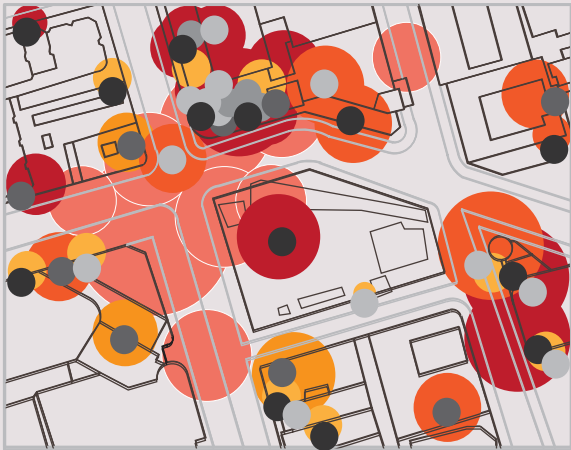
Pedestrian traffic layer + Yelp time log layer + Yelp listing users layer

Surrounding real estate values + Yelp reviews layer
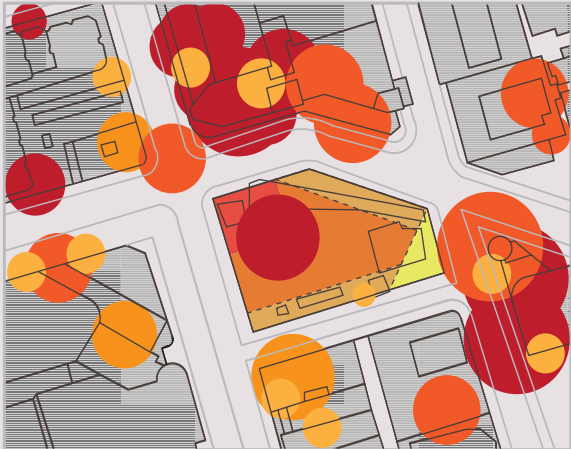
Level of exposure zones + Yelp listing users layer

DIGESTIVE CYCLE OF DATA

Digitalscapes within a context are the layers of data that are created by digital platform citizens - but how are these data extracted and utilized in the thought process of design? The utilization of digitalscapes can be broken into four stages of digestion of data: the collection, data archives, extraction and output. Each step serves an integral role in reading and translating digital data within the physical built environment. The collection is the main point of interaction between the built environment and the citizens involved. It is the interactive component that either digital or physical platform citizens can engage with and provide valuable data to be processed throughout the cycle. The data archives can be seen as the stomach of the digestive data cycle, it is where valuable data is stored and saved for a later time. But if the data archive is the stomach, the extraction component is the liver of the digestive data cycle, which selects and pairs data sets to form meaningful information. The extraction component is key in determining how the built environment interacts with its citizens, and therefore, typically the place where designers first become involved. The output is the component that utilizes the information given, and provides an outcome that is readable to the intended occupants of the space. This entire process should be seen as a cycle, where each component plays a vital role in either processing data or creating new data ready for "consumption."

data archive

collection

extraction

output
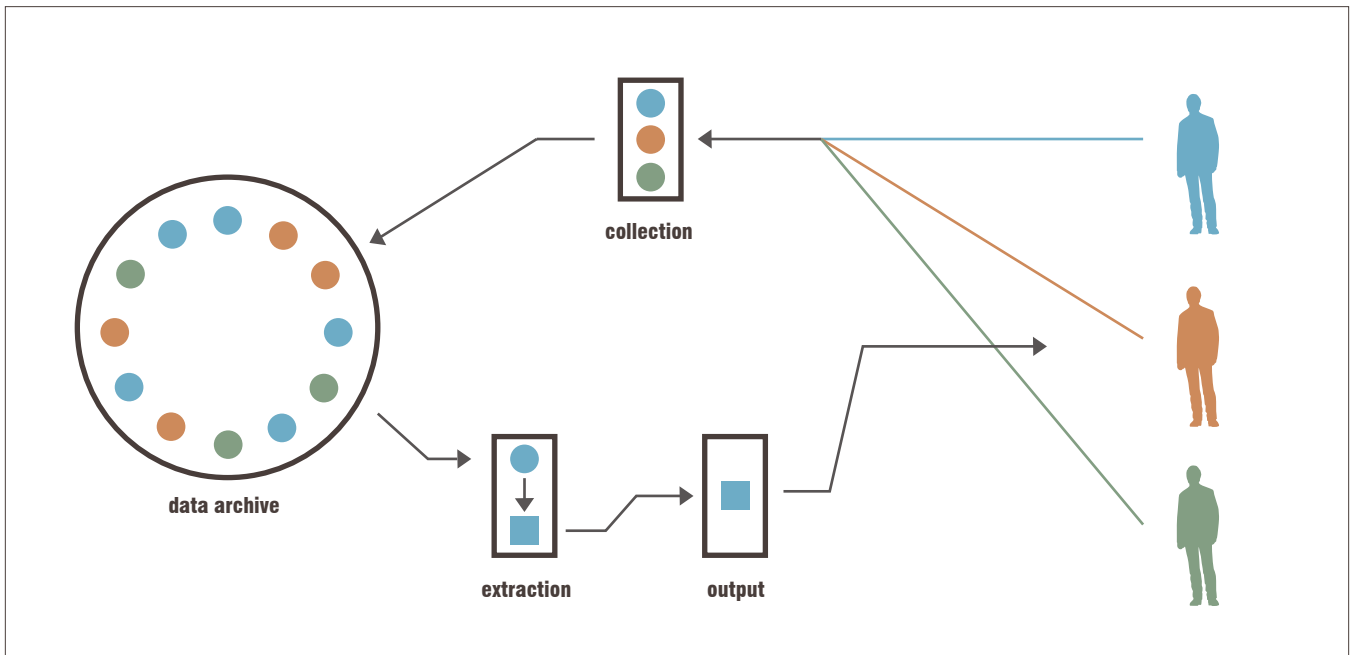
fig. 14 digestive cycle of data diagram

DATA TRANSFER IN ARCHITECTURE

So far, the thesis identified emerging digital platform citizens and how the data they generate affect the understanding of context. But what do these new emerging occupancies mean for the design practice itself? The change in architectural thinking lies in the expansion of understanding human occupancy. Given that digital users are citizens of the public realm, they influence and are able to be influenced by the built environment around them as much as their physical counterparts. It is the responsibility of architectural intervention to facilitate this relationship, determining how data flows between the two platforms of occupancy.

To categorize the methods in which architecture can facilitate the data flow, I propose a taxonomy of data transfer in architecture. The taxonomy includes three classifications: the physical to digital data flow, the digital to physical data flow and looping data flow. Each method creates a unique responsive environment that is either using one platform to enhance the other, or creating a dual beneficiary environment where the nurture of one grows the other as well.

Each type of data transfer method has its own unique characteristics, and thus, offer different types of dual platform relationships. Each can be broken down to points or laws of data flow relationships to help categorize and design with this particular lens as a valuable guide or toolset.

Laws of digital to physical data flow relationship:

1. Digital information is represented through physical platform
2. Digital output (response) is represented through physical platform
3. Digital participants have a direct consequence on the physical realm
4. Physical participants do not have a direct consequence on the digital realm

A generic digital to physical data flow relationship translates digital data collected solely from online participants into physical results. These relationships typically rely on an active digital community to activate or animate the physical output. The relationship is able to identify the digital community and its activity as a physical public entity. However, the community may not freely participate between the digital and physical realms - the path of data flow is one sided, allowing only digital citizens to participate in both physical and digital realms. In this case, physical citizens are alienated, as they do not have a direct affect on either the physical or the digital realms in this scenario.

direction of data flow

digital platform
citizens

physical platform
citizens

digital realm   physical realm

not participating within
platform

actively participating
within platform

physical to digital
data flow

digital to physical
data flow

loop data flow
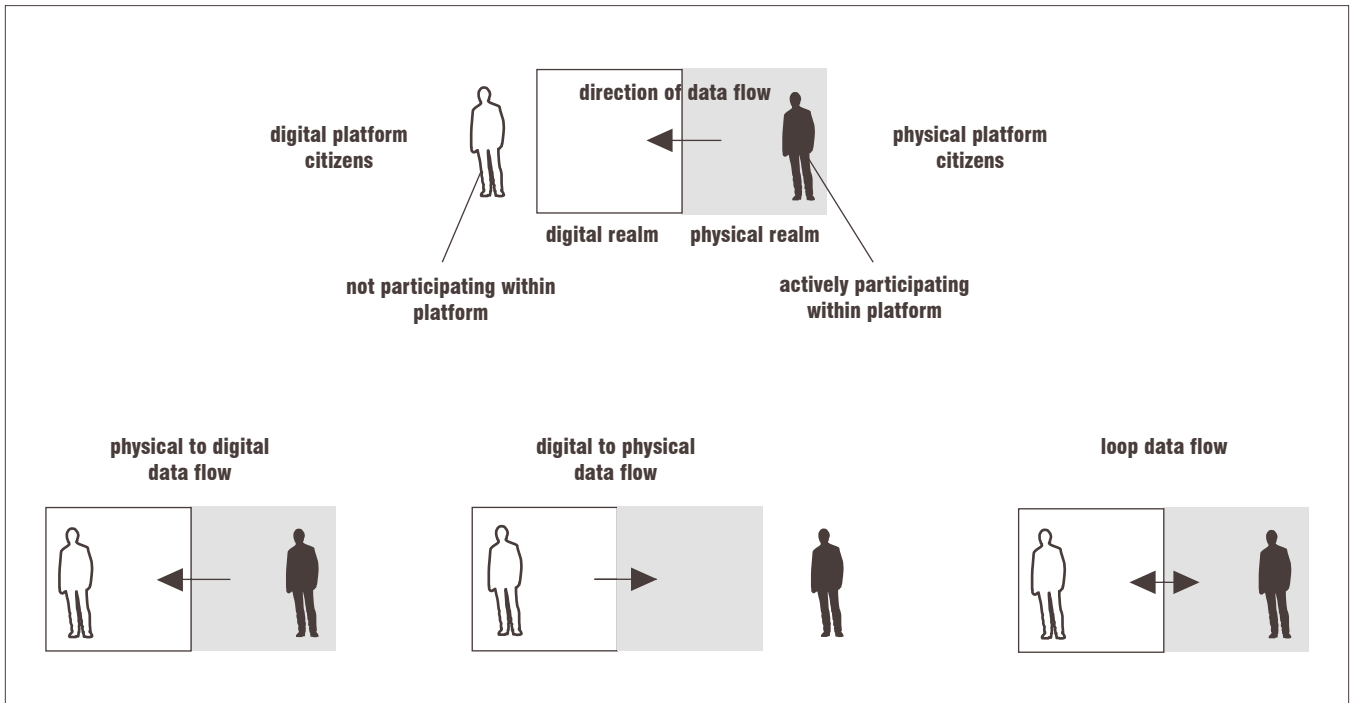
fig. 15 data transfer diagram legend

live information

archived information

live output

archived output
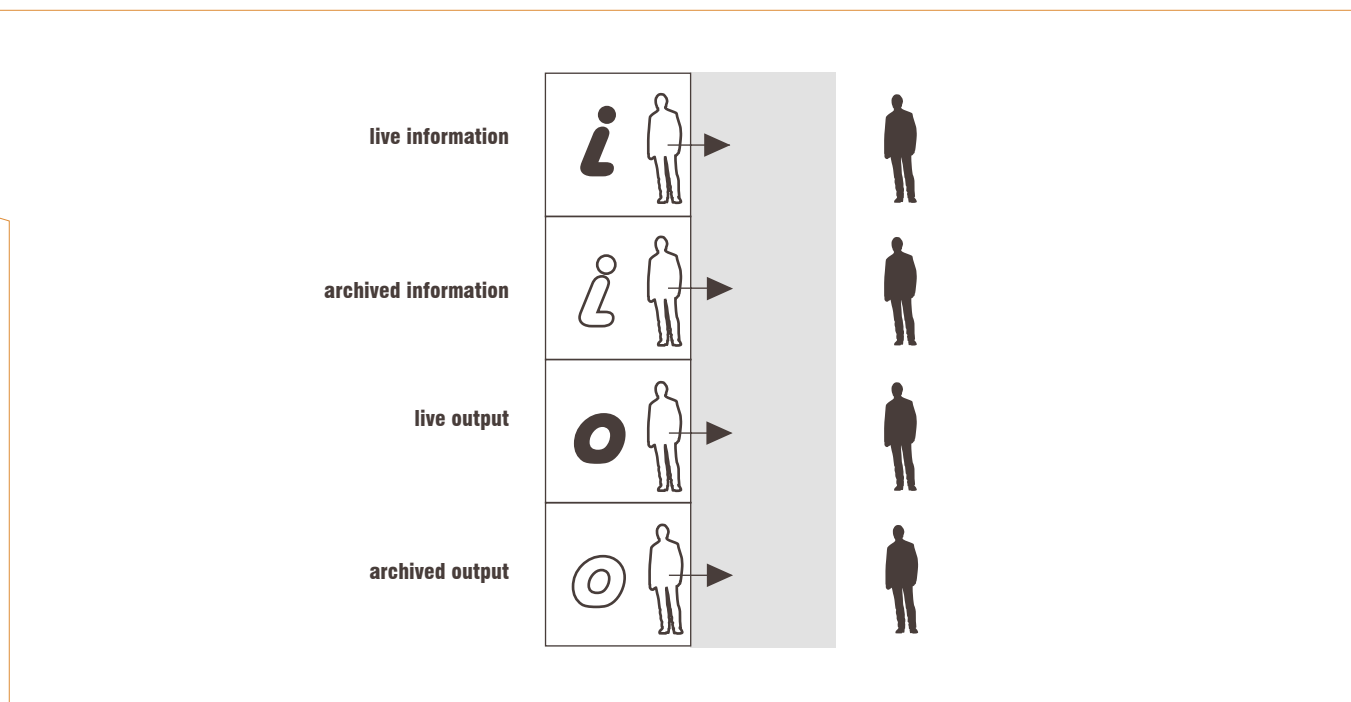
fig. 16 digital to physical data flow possibilities

Laws of physical to digital data flow relationship:

1. Physical information is represented through digital platform
2. Physical translation is represented through digital platform
3. Physical participants interact solely through a physical UI system
4. Digital citizens have no impact on the physical environment

A generic physical to digital data flow relationship translates physical information collected solely from physical participants into digital data. These relationships typically require a stand-alone physical environment that is regularly populated. The integration of digital platforms are used as add-ons to enrich physical occupants with the data collected. The relationship relies on the physical public realm to be an active open environment. The use and popularity of the digital counterpart is dependent on the amount and accuracy of the physical data collected. This generates unidirectional path of data flow, where the digital realm is a result of physical activities. The path of data flow is one sided, allowing only the physical citizens to participate in both physical and digital realms. Although both the physical and digital citizens may occupy their realms, the digital citizens are reduced to becoming spectators of physical activities.

Laws of loop data flow relationship:

1. Digital output has a direct consequence on the physical environment
2. Physical output has a direct consequence on the digital environment
3. Both platforms generate and interpret data

A generic looping data flow relationship allows both digital and physical platforms to generate and output data. Digital and physical citizens both participate separately within their own platform, but the data they produce directly affects its counterpart. This creates a link between the two platforms, allowing synchronization of activities that occur and have beneficial or consequential effects on both platforms. The popularity of one platform fuels the other, generating a loop of cause and effect between the two. In this scenario, both digital and physical citizens are synonymously participants and spectators of either realm's activities - making them dual platform citizens.

live information

archived information

live output

archived output
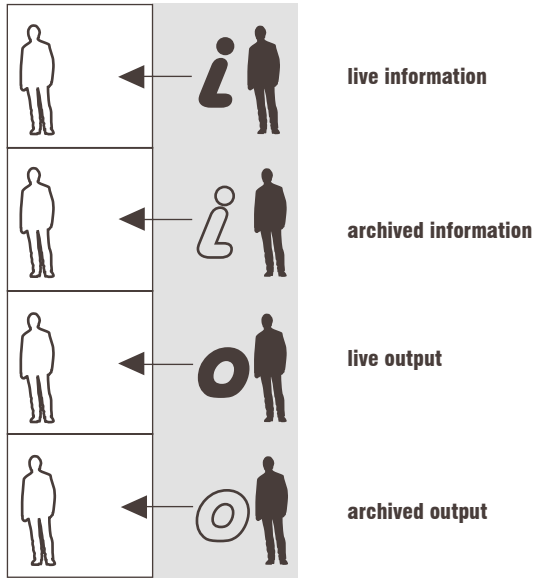
fig. 17 physical to digital data flow possibilities

live information

archived information

live output

archived output

live information

archived information

live output

archived output
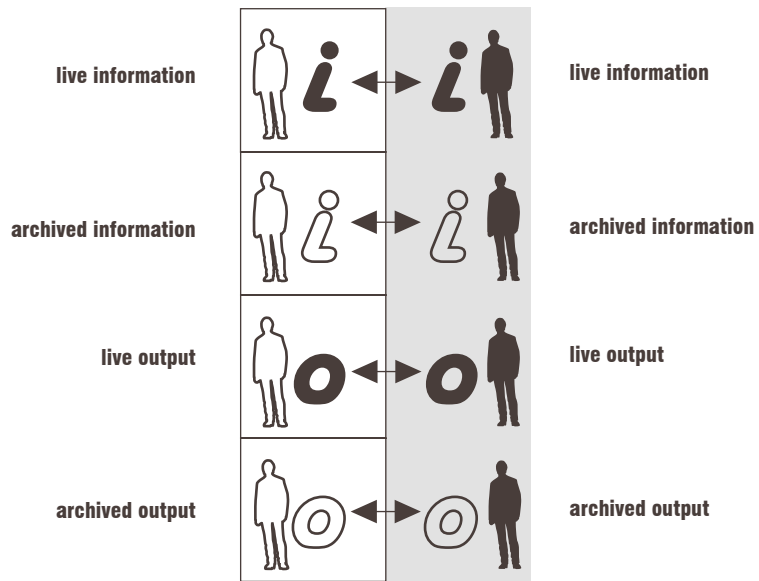
fig. 18 loop data flow possibilities

ARCHI-TECTURE AND DIGITAL PLATFORM NOW.

DUAL PLATFORM UNDERSTANDING IN ARCHITECTURE NOW

The previous chapters provided the background knowledge and lenses in which to evaluate built environments with dual platform understanding. To review, the dual platform understanding in architecture encompasses four essential steps in expanding the design practice of built environments. First is identifying digital platform citizens involved and including them in the design process as a proper occupancy type. Second is layering appropriate contextual data produced by digital platform citizens in question, to form digitalscapes in architecture. These digitalscapes are made to aid design decisions and offer opportunities for continual responsiveness to its occupants. Third, is forming a digestive data cycle to appropriately extract and deliver data throughout the built environment. Lastly, it is the responsibility of the architect to design the relationship between physical and digital platforms within the built environment, creating unique levels of responsiveness and engagement to its occupants.

These steps of dual platform understanding in design will now be used as different lenses in which to evaluate case studies of current dual platform practices. These evaluative lenses covered in the previous chapters act as filters to help understand the successes and shortcomings of contemporary dual platform projects. In addition to examining current practices, I will continue the previous Dundas Square scenario covered in Chapter 3, and illustrate how dual platform understanding can be integrated into the design process.

The exercise is meant to be a deconstructing evaluation of dual platform understanding in design today, and to help visualize how these evaluative lenses should be implemented in architecture. The exercise will only focus on the process of dual platform thinking, aiding in creating a step-by- step thinking process of dual platform understanding in environment design.

EACH CASE STUDY WILL BE EXAMINED IN ITS:

A) DIGITAL PLATFORM CITIZENS	CHAPTER 1
B) DIGITALSCAPES	CHAPTER 3
C) DIGESTIVE DATA CYCLE	CHAPTER 3
E) DATA TRANSFER	CHAPTER 3

BUILT
CASE
STUDIES

Unnumbered Sparks at night (*Skies Painted with Unnumbered Sparks*. Photo: Ema Peter)

fig. 19 projection setup

colour movement

The installation is a large canopy on top of a public space, participants are able to interact with the canopy via cell phone app by changing its colour and patterns that appear. Unnumbered Sparks combines the interactive function of digital technology with sculptural urban art, engaging people below the canopy to input their personal prefernce in colour and its movement.[fig.19]

Physical platform citizens are able to engage with the sculpture by using their smart phones - through an app, passersby are able to input their own personal tastes on to public urban art.[fig.20] They choose the colour and the movement of the colour streaks that are projected throughout the sculpture. As more people partcipate, the effect stacks to create a multilayered display of public engagement - making a sculpture with personally customizable functions to become a communal activity.[fig.21]
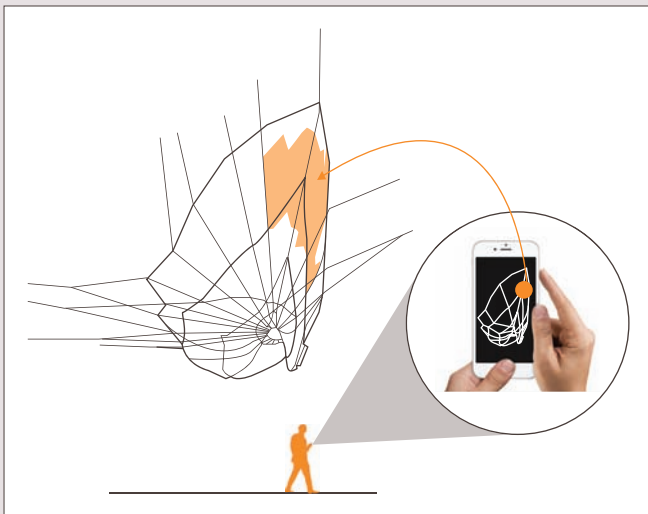
fig. 20 one individual input
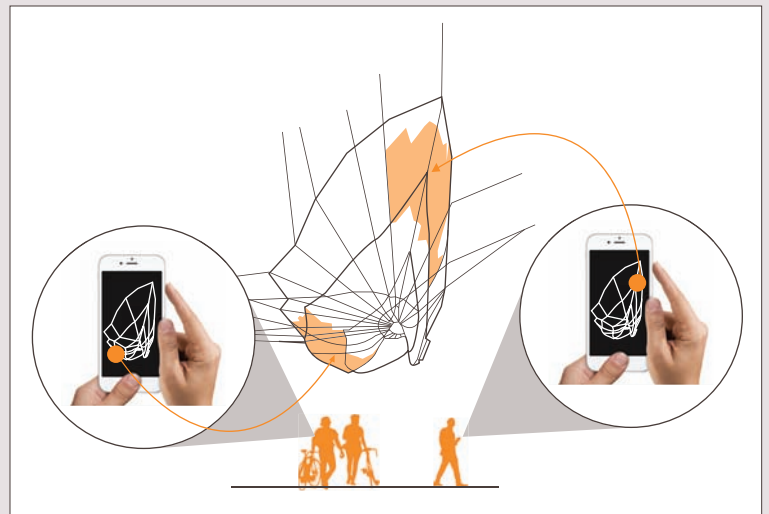
fig. 21 multiple input

UNNUMBERED SPARKS(2014) by JANET ECHELMAN, AARON KOBLIN

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

A — application not installed

B — application user — active user

C — absent — tourist — frequent visitor — active local — event planner
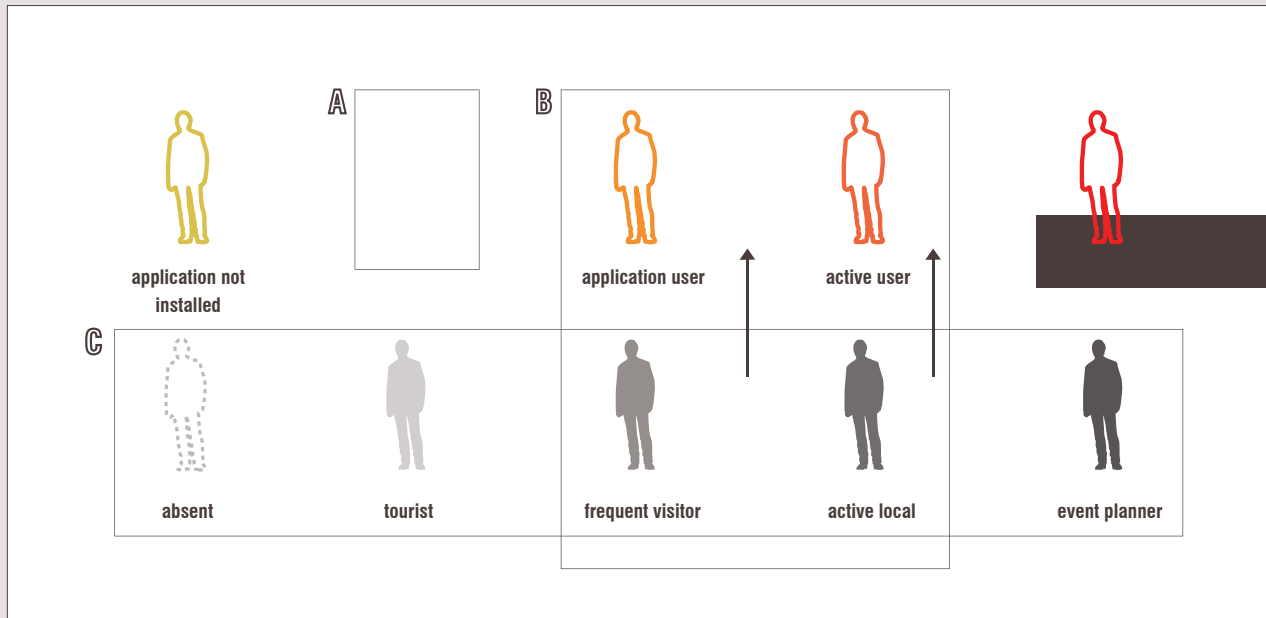
fig. 22 digital platform citizens and physical platform citizens involvement
digital platform citizens lens covered in Chapter 1

A | There is no way to observe the digital activities as a digital citizen. The digital platform is simply a tool for physical output results.

B | Digital and physical citizens that interact with the installation are the same people. In this instance, their physical presence is also represented through digital means.

C | The physical community already exists, and they leave digital footprints as they engage the installation. A digital community does not exist - it is the physical community that taps into the digital platform.

people interacting with the unnumbered sparks installation
(*untitled* Photo: Bret Hartman)

The installation uses the traditional layers of urban art contextual information, but adds cellphone digital layers of its participants. Once users download the app and begin to engage with the sculpture, the more dense these layers become - forming complex colour and movement relationships.

cellphone app
engagement: colour

cellphone app
engagement: movement

pedestrian circulation

weather conditions

shade analysis

existing adjacent
infrastructure
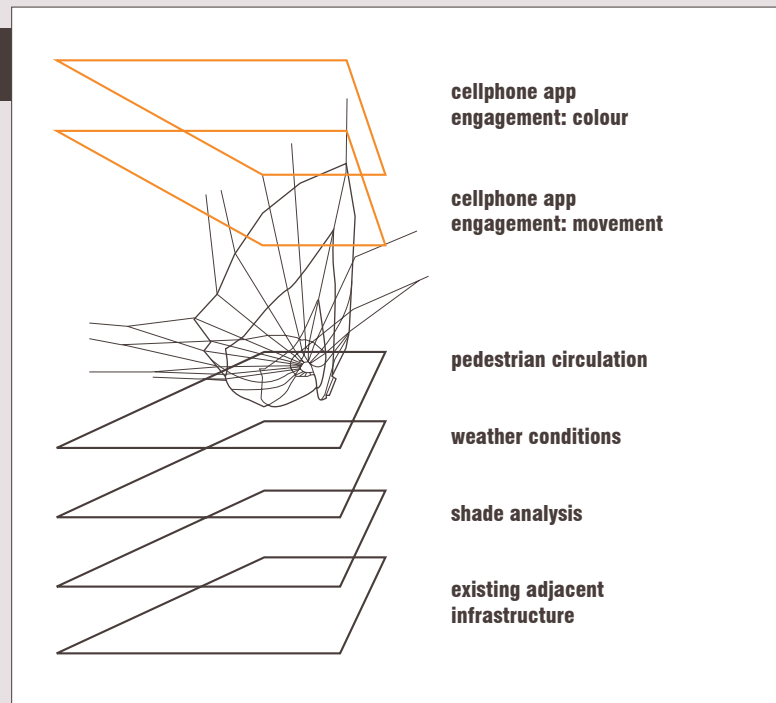
fig. 23 digitalscapes + physicalscapes
digitalscapes lens covered in Chapter 3

UNNUMBERED SPARKS(2014) by JANET ECHELMAN, AARON KOBLIN

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

EXISTING INFRASTRUCTURE

DESIGNER

collection:
cellphone

A

CODE DEVELOPER

data archive:
cellphone
application

extraction:
finger input

output:
projection

output:
projection

▲ = movement   ■ = colour setting   ● = finger touch
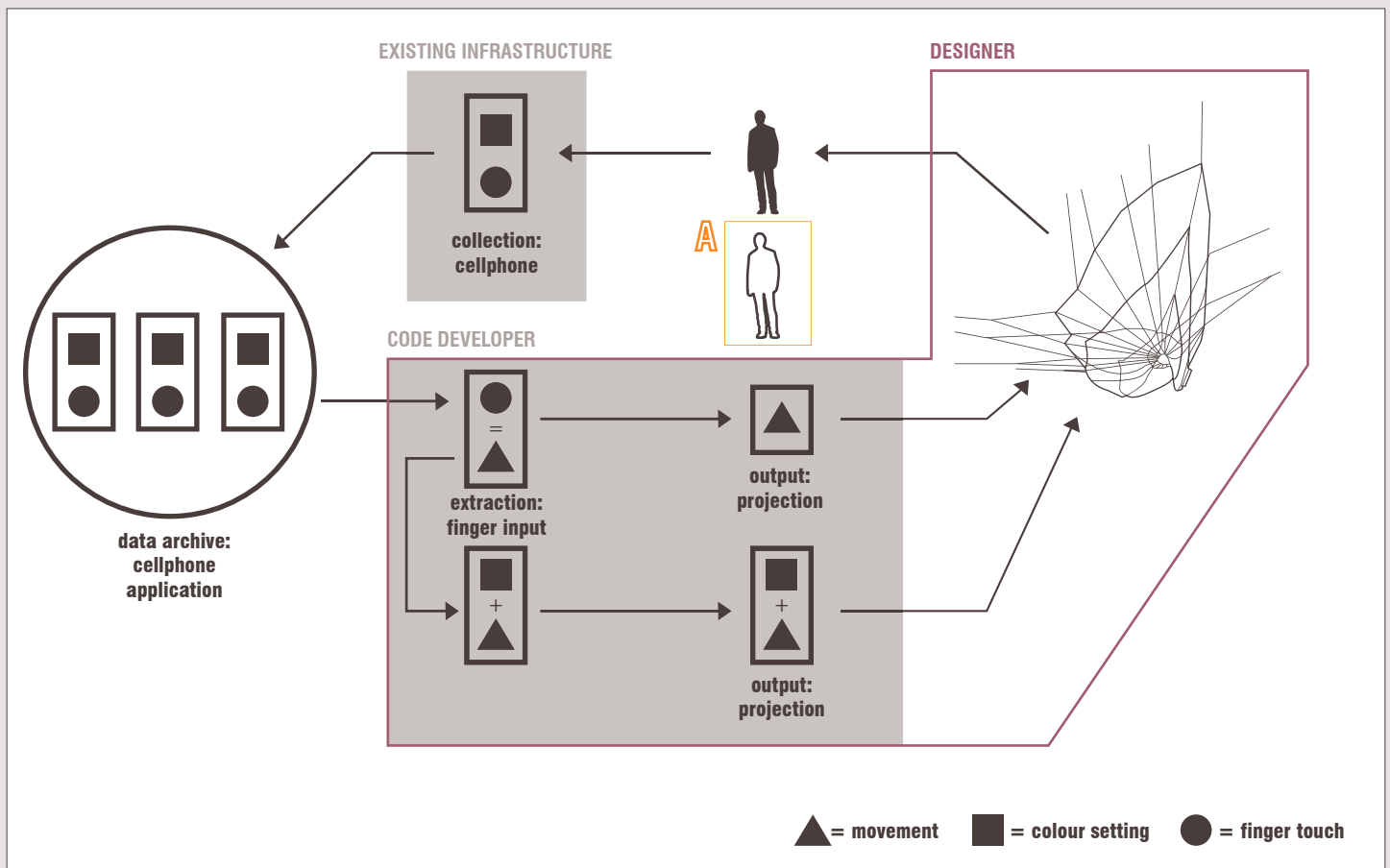
fig. 24 digestive cycles of data
digestive data cycle covered in Chapter 3

A — A digital community does not exsist, it is a loop data transfer between physical occupants and digital platforms. Ultimately the data transfer only represents the physical platform citizens only.

DESIGNER — The role of the designer was to develop an installation that allows interaction to occur between a mobile digital platform (cell phone in this case) and a physical platform (the sculpture).

Unnumbered sparks is a unique digital to physical relationship, due to physical participants exclusively interacting through digital platforms. Digital citizens do not exist in this scenario, making the installation a sophisticated interactive display sculpture. It converts digital data produced by physical participants into physical results.

physical participants interact with their cellphone app to change the appearance of the installation

there is no physical interaction, physical participants are left only to be active in the digital realm
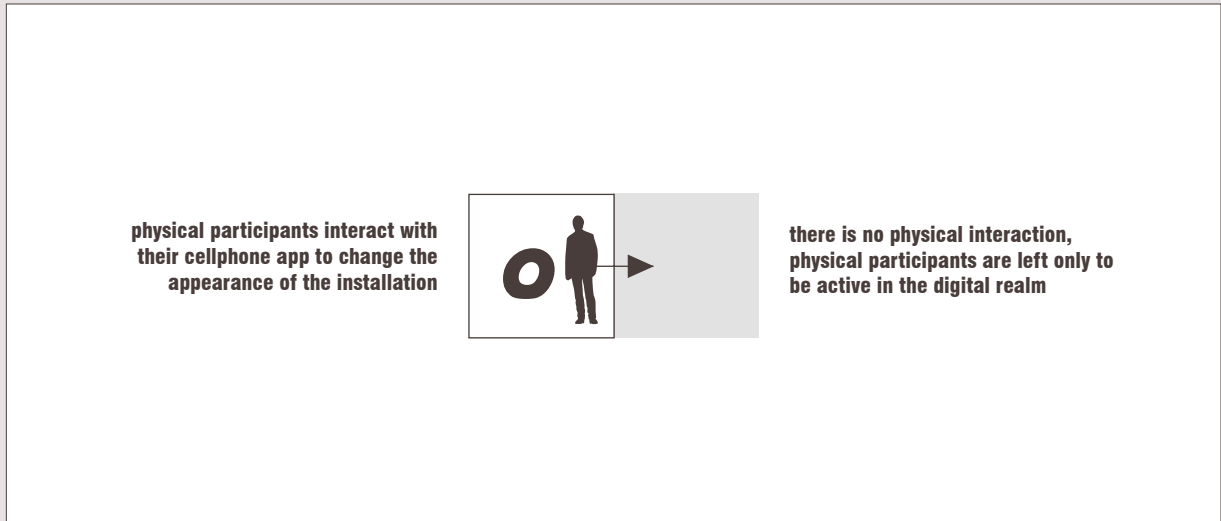
fig. 25 digital to physical data transfer
digitalscapes lens covered in Chapter 3

eCLOUD at the San Jose Airport (*untitled* Photo: Spencer Lowell)

fig. 26 eCLOUD panels

eCLOUD is meant to be an art piece that displays live weather data. Depending on the weather conditions of different cities, the panels that make up the installation changes in translucency.[fig.26]

This installation is a very early example of bringing in digital data into the physical realm. Although the installation serves more as a sculptural piece rather than an immersive responsive design, it succeeds in interpreting digital data into physical means of communication.
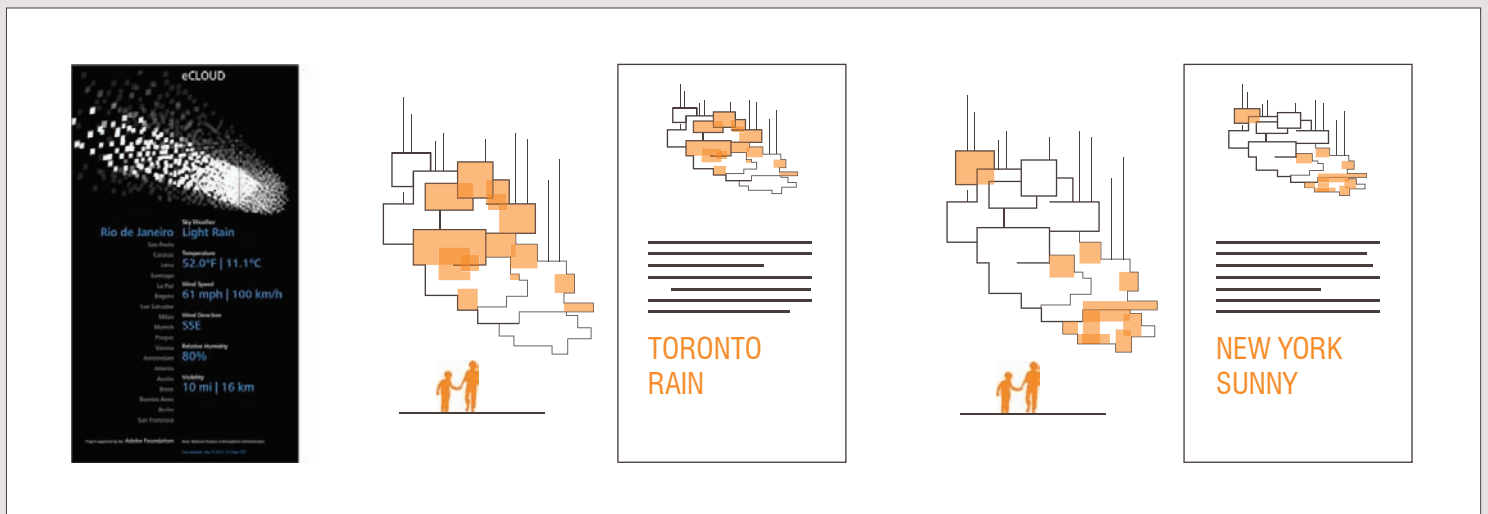
fig. 27 eCLOUD weather forcast display

ECLOUD(2007) by DAN GOODS, NIK HAFERMASS, ARON KOBLIN

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

A

no digital
connectivity

absent   observer   tourist   frequent flyer   flight staff
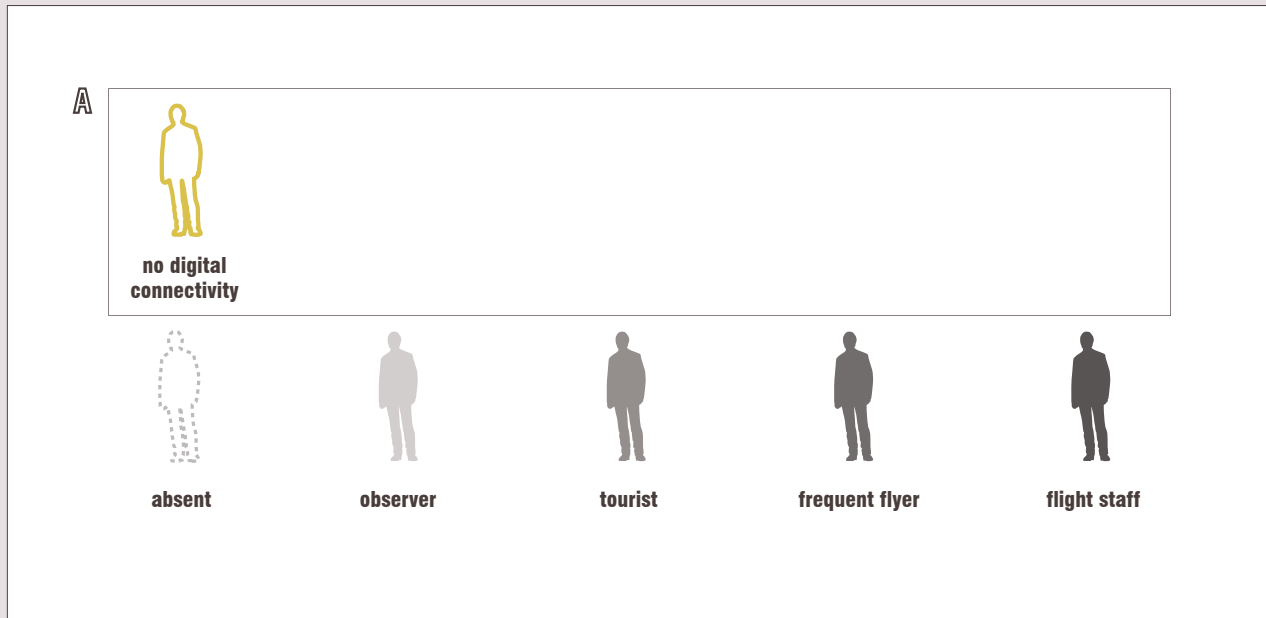
fig. 28 digital platform citizens and physical platform citizens involvement
digital platform citizens lens covered in Chapter 1

A | There is no digital community - it is digital data that is brought into the physical realm to benifit the physical community. There is no contribution to the digital community, as there are no platforms to accommodate or encourage online activity.
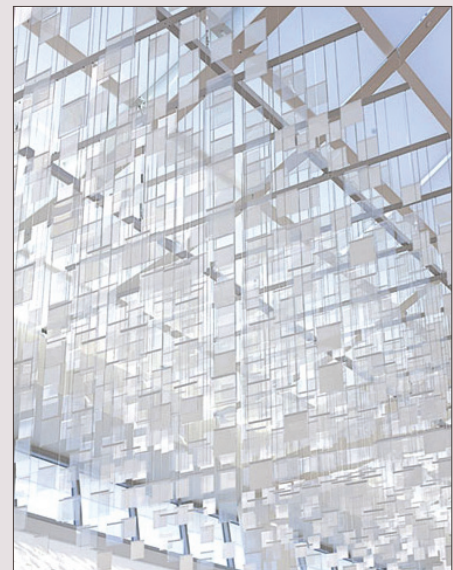
eCLOUD panel installation (*Untitled* Photo: Spencer Lowell)

As airport travelers require weather data of different city destinations. The installation allows quick visual cues to view weather data. Bringing in these layers into the physical realm enhances the viewing experience of weather data, making statistical information into a sculptural viewing experience.
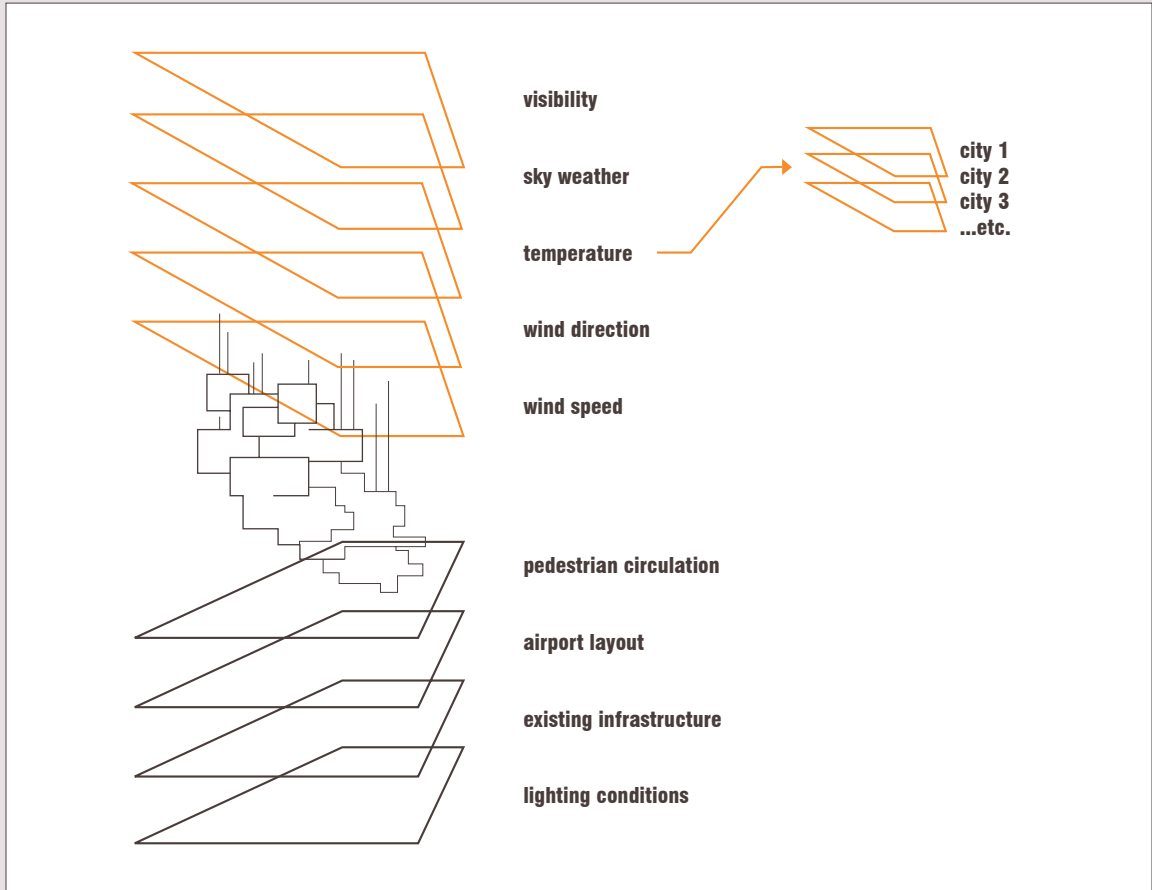
fig. 29 digitalscapes + physicalscapes
digitalscapes lens covered in Chapter 3

ECLOUD(2007) by DAN GOODS, NIK HAFERMASS, ARON KOBLIN

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

EXISTING INFRASTRUCTURE

B

A

DESIGNER

collection:
weather
stations

data archive:
airport servers

extraction:
city selection

output:
visual translation

CODE DEVELOPER

○ = wind speed   ☐ = wind direciton   ▲ = sky weather   ■ = visibility   ● = temperature
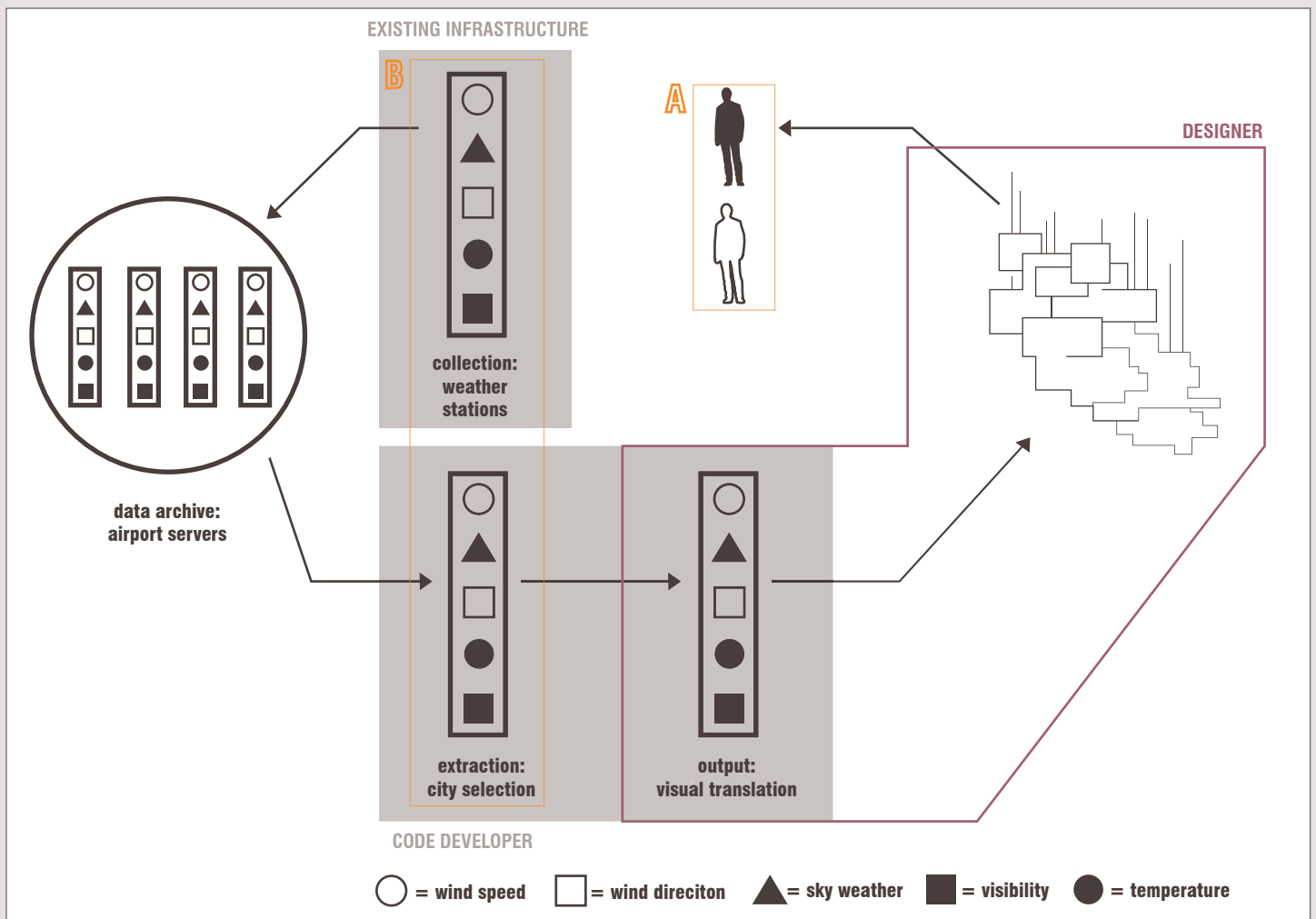
fig. 30 digestive cycles iof data
digestive data cycle covered in Chapter 3

A A digital community does not exsist, the installation only caters
to the physical community. There is no relationship between
the data collected and the participant's input.

B Partcipant's input is not directly related to the data - no
relationship exsists between what is being displayed and its
occupants.

DESIGNER The role of the designer was to figure out what kind of visual
cues should be made to view the data through a physical
platform. It is simply a smart sign that takes live weather data
and translates it into a physical language.

The eCLOUD is a simple digital to physical data transfer relationship. The installation is meant to display live information, through translucency algorythems. The display language does not have any physical significance, and is meant to be expressive of its data. Although visitors are able to change which city data the installation displays, the installation is a clear example of digital to physical data transfer relationship. It is a one way display board that translates digital data into a physical analog language. The physical occupants are witnesses to the data, not neccessarly participants of them.

live information of the weather is translated into translucency of the panels

passive information is displayed regarding the cities people are interested in

physical participants are left inactive, there is no possibility of engagement with the data displayed
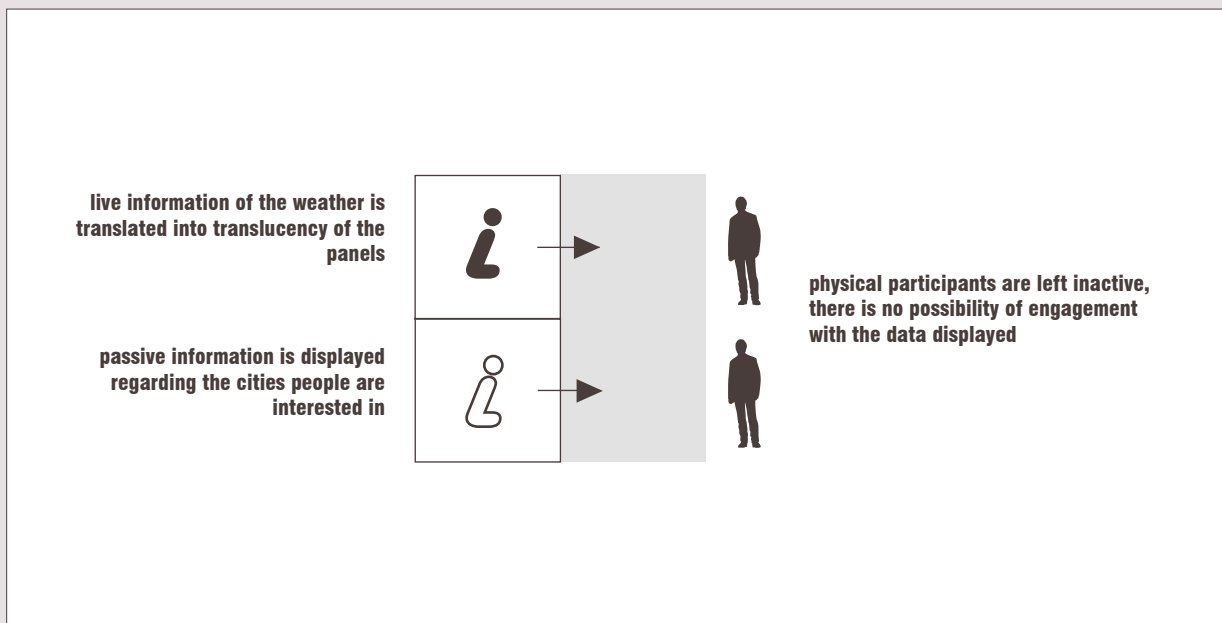
fig. 31 digital to physical data transfer
digitalscapes lens covered in Chapter 3

Wikipedia 10th anniversary installation (*Untitled* Photo: Dean McNamee)

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

The installation has 18 printers mounted on top of a canopy, connected to the wikipedia live activity database. When users of wikipedia submit new entry or makes corrections on an existing wiki page, the installation prints out a card showing the live entry.[fig13] The installation continues to print throughout the anniversary event, causing a mound of wiki cards on the floor showing the quantity and live frequency of active users within Wikipedia.

From editing online to printing of cards, the process happens live - showing not only the content created, but displaying physical evidence of digital activities. In summary, the installation allows digital information to become tangible physical artifacts.[fig12]

Physical occupants can see the digital activities and choose to either be an observer of the global event, or participate themselves through internet connected devices.

fig. 32 Card printed from the installation
(*Untitled* Origional Photo: Dean McNamee)
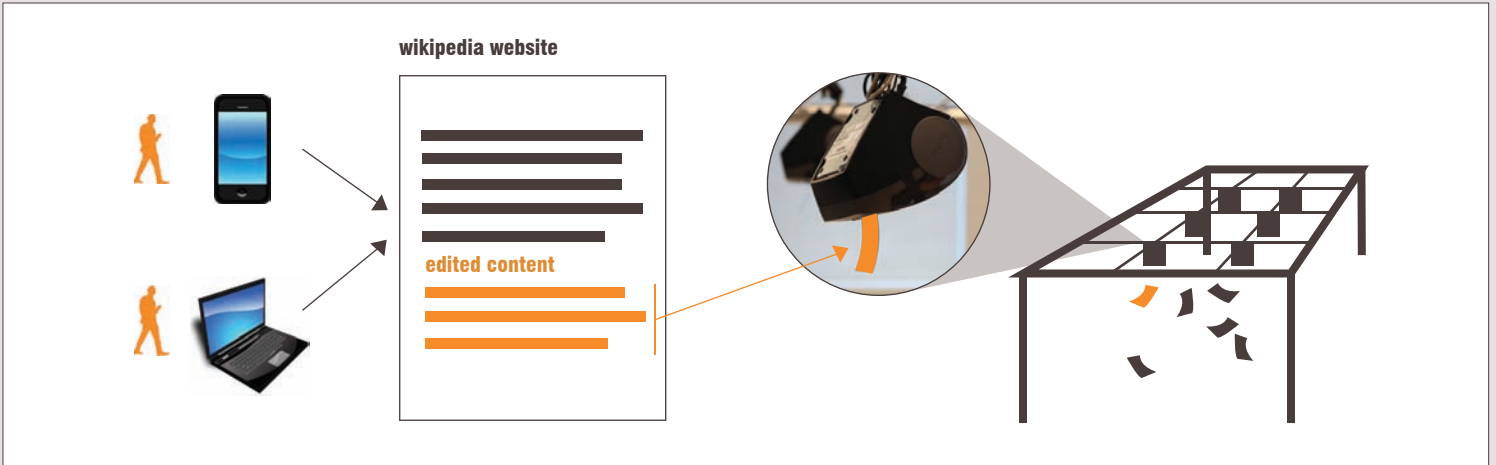
fig. 33 Wikipedia 10th anniversary installation (how it works)

WIKIPEDIA 10TH ANNIVERSARY(2011) by TIM BURRELL-SAWARD

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

| A				
no digital connectivity	wiki page reader	wiki page editor	major contributor	moderator
absent	observer	participant	active partcipants	event planner
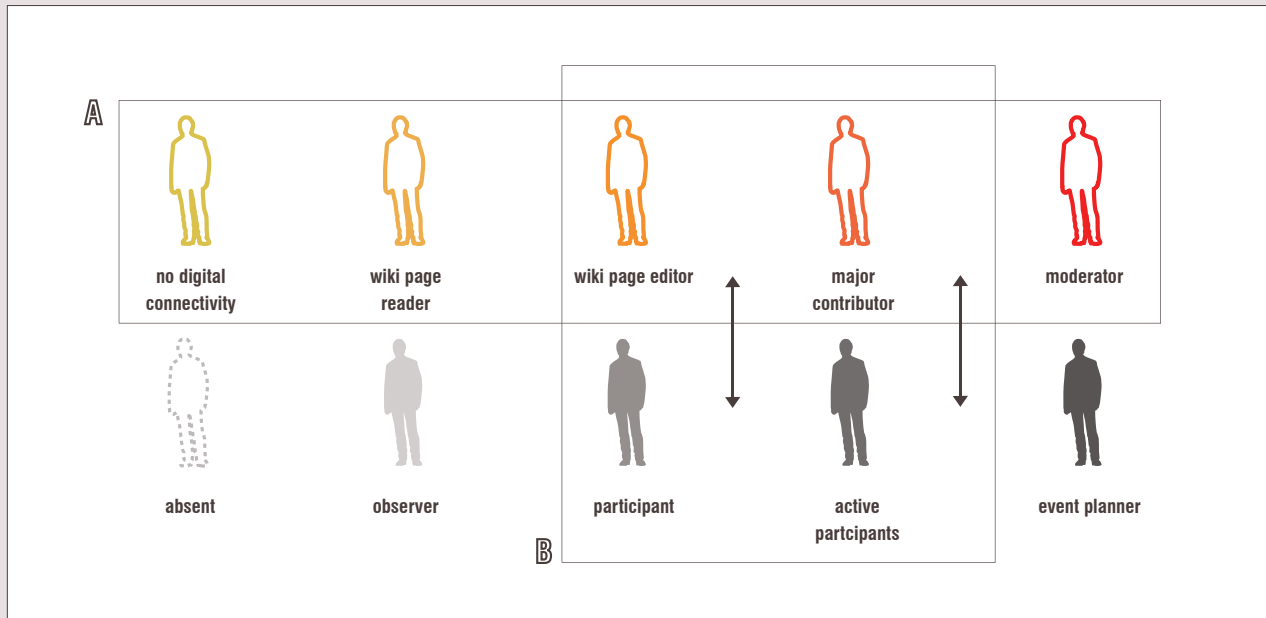
fig. 34 digital platform citizens and physical platform citizens involvement
digital platform citizens lens covered in Chapter 1

A   There is already an existing online Wikipedia community - with clear hierarchy and an already established active participation.

B   There is a live relationship between digital activities and physical results. Digital content begin to affect the physical user of the space, depending on the level of participation, the occupant is both a digital and physical citizen.

installation printed cards on the floor (*Untitled* Photo: Dean McNamee)

The only digital layer that the installation taps into is the wikipedia web page. Within this layer, the data tracks author profiles, time stamps, edited content and its title or the article in question. Due to the installation being a sculptural art piece, the relationship between the digitalscapes and physicalscapes is very specific and does not have multiple functional capabilities.
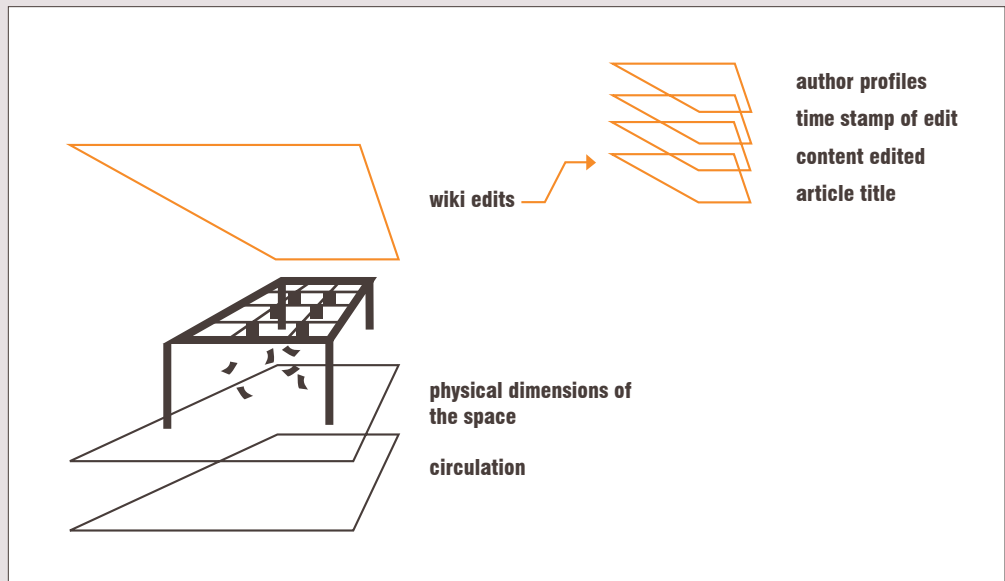
author profiles
time stamp of edit
content edited
article title

wiki edits

physical dimensions of the space

circulation

fig. 35 digitalscapes + physicalscapes
digitalscapes lens covered in Chapter 3

CASE STUDY . CONCLUSION .

WIKIPEDIA 10TH ANNIVERSARY(2011) by TIM BURRELL-SAWARD

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

EXISTING INFRASTRUCTURE

A DESIGNER

B

collection:
website

data archive:
wikipedia server

extraction:
individual edit

output:
printer
instructions

CODE DEVELOPER

◯ = article title ▲ = edit content ■ = time stamp ● = author
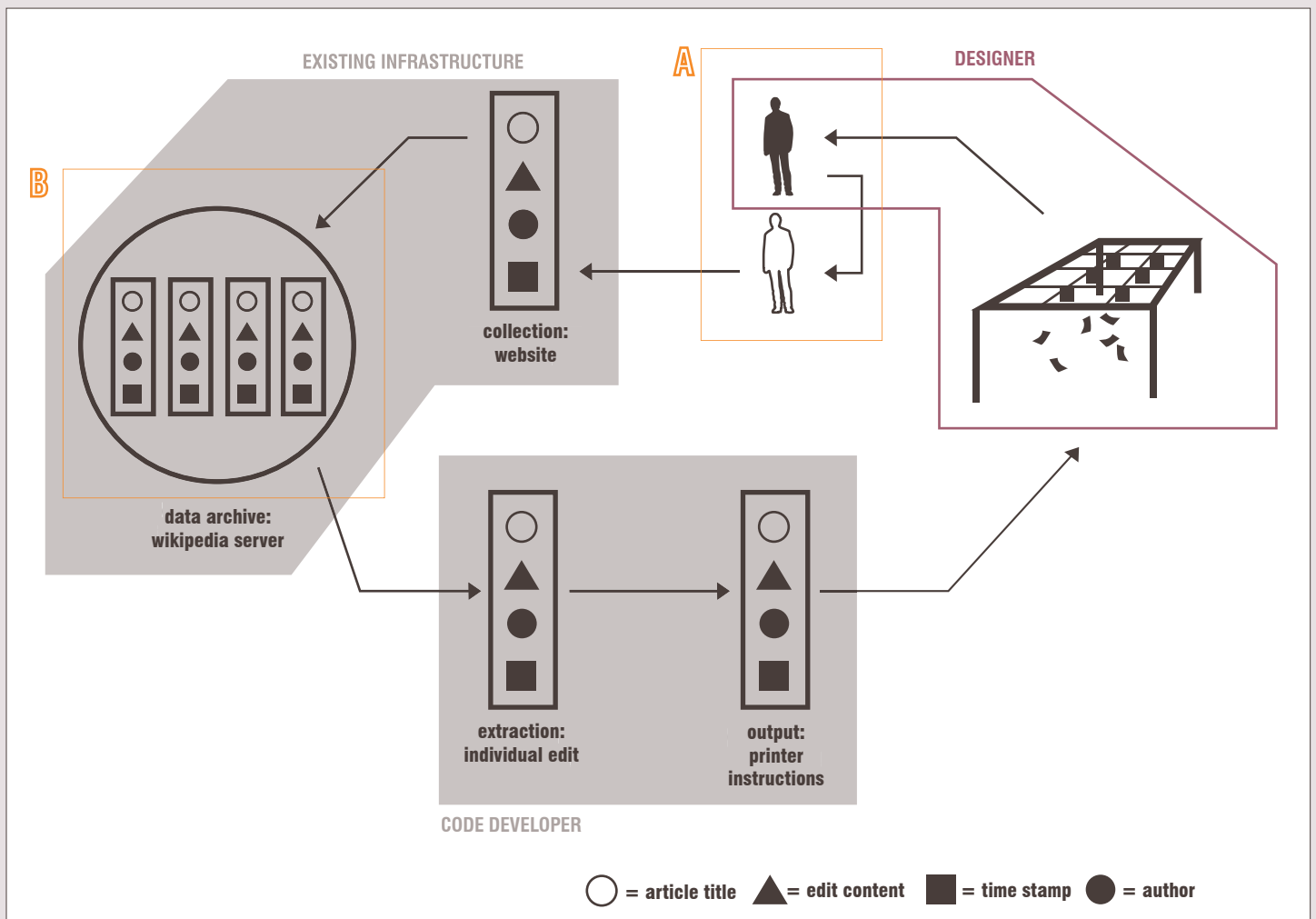
fig. 36 digestive cycles of data
digestive data cycle covered in Chapter 3

A Only the digital community is responsbile in creating data for the installation. Physical participants must use digital platforms to be part of the data digestive cycle.

B The data is kept as a set and added into the archives of the Wikipedia website server.

DESIGNER The role of the designer was to design the installation that would print the information in a creative manner, there was no need to produce project specific coding for collection, extraction, or output of data.

The Wikipedia 10th anniversary installation exemplifies a digital to physical relationship. Live online activities of digital platform citizens are brought to the physical realm through printers mounted on top of the installation. The frequency and amount of online content changes the physical environment by forming a mound of printed online content. Although it is a clever way of bringing digital text into physical reality, the physical participants have no direct impact on the digital realm. The participants of the event can interact with the physical environment by sifting through the cards or even taking a card home with them, but doing so does not send back any information or output data to the digital realm. The installation is a one way translator, converting live digital information and output content into tangible artifacts.

the date stamp, content of change, and the user that made the change is printed on the card

the physical participants are able to read through the cards and take it with them if they wish

the content is printed live as the changes to the wiki page is being submitted

live printed content shows the participants physical evidence of the frequency of Wikipedia user activities

fig. 37 digital to physical data transfer
digitalscapes lens covered in Chapter 3

Data lantern displaying data with light (*Untitled* Photo: Future Cities Lab)

DATA LANTERNS(2015) by FUTURE CITIES LAB

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

fig. 38 data lantern setup

Data Lanterns are networks of sculptures that illuminate layers of urban traffic data. The bus and subway information is displayed by colour coded lanterns that is updated with live traffic data. Depending on the colour and the positioning of the colours, the pedestrians can view how close the subway or the bus is to the pick-up point.[fig.38]

The installation acts as an urban public art piece that informs commuters important transit information. It is an experiment in urban public art, street lighting and transit information display.

From a distance, simple visual ques allow people to identify bus traffic data.[fig.39] Not using numbers or words allow quick distance reading of GPS bus traffic data.

Subway data collected through subway stops are tracked and relayed to the lanterns.[fig.40] In this, a common infrastructural data is translated and displayed on the street, allowing pedestrians to see the data.

Oh! The bus is coming soon, I don`t have to wait too long...

fig.39 Data lanterns bus indicator

Better hurry to the subway station! I see the subway coming.
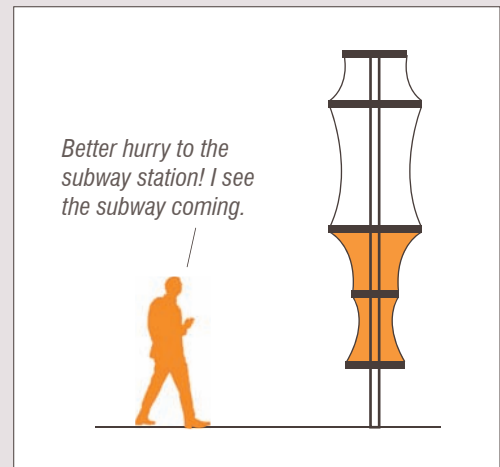
fig.40 Data lanterns subway indicator

DATA LANTERNS(2015) by FUTURE CITIES LAB

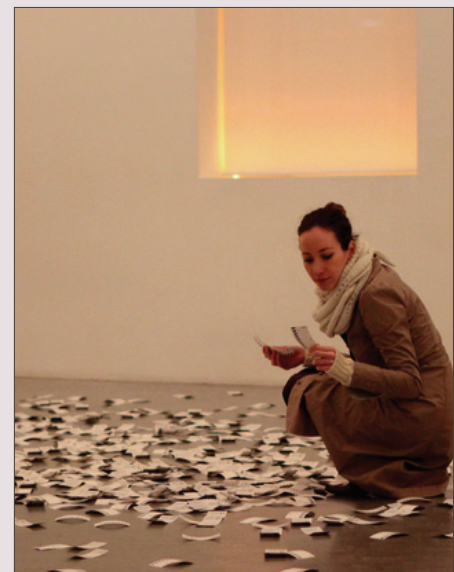INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

fig. 41 digital platform citizens and physical platform citizens involvement
digital platform citizens lens covered in Chapter 1

A There is no digital community that is engaged, it is just the digital data and infrastructure that are extracted for the benefit of its physical citizens.

B There is already an existing physical community of users, the installation enhances this community with digital data.

data lantern installed in the street
(*Untitled* Photo: Future Cities Lab)

The installation uses traditional architectural layers for public street sculpture or signage - but adds on the subway and bus tracking digital information. Although the lanterns are static urban sculptures, transit information provides active - moving data, making the sculpture appear dynamic.

subway location data

bus GPS tracking data

street level conditions

pedestrian ciruclation

bus routes + stops

subway stations
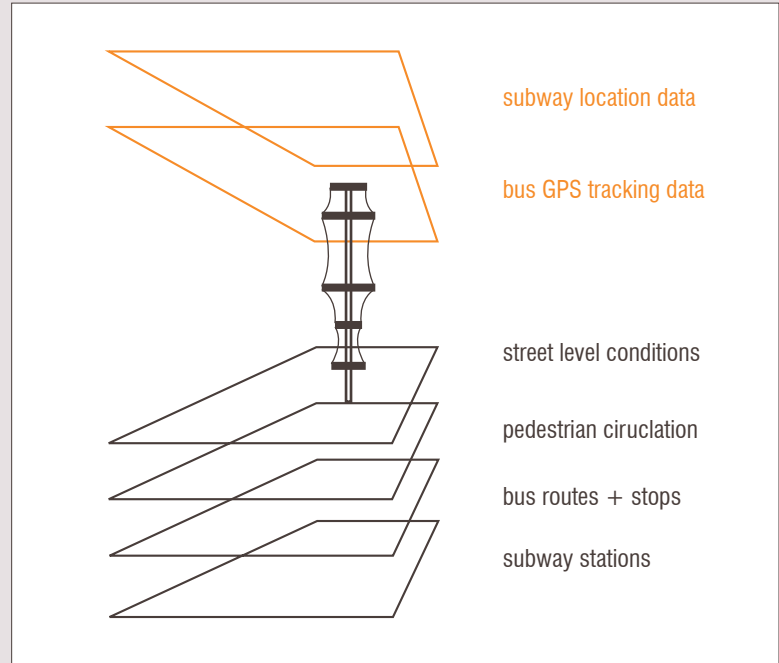
fig. 42 digitalscapes + physicalscapes
digitalscapes lens covered in Chapter 3

DATA LANTERNS(2015) by FUTURE CITIES LAB

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

EXSISTING TRANSIT INFRASTRUCTURE

data collection:
bus GPS data
server

DESIGNER

B

A

collection:
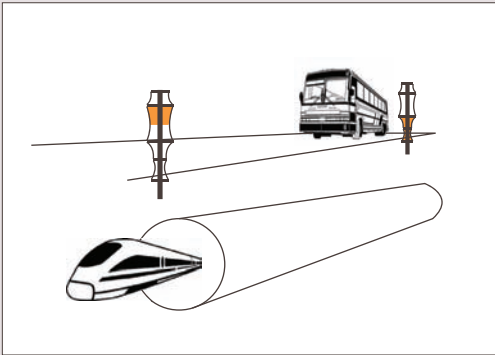traffic data

data collection:
subway data
server

extraction:
nearest
proximity data

output:
LED data

CODE DEVELOPER

■ = subway data   ● = bus GPS data

fig. 43 digestive cycles of data
digestive data cycle covered in Chapter 3

A There is no digital community, the installation is solely for the benefit of the physical community.

B There is a separation between the data and the participants involved - engagement does not affect the data in any way. Additionally, the bus GPS and subway proximity data does not share a relationship as a data set.

DESIGNER The designer creates the relationships between the two data sets (subway and bus GPS) and makes them relative to surface activities.

Data Lanterns translates physical information into digital data - making digital data visible to physical participants. The data flow is one directional and has no active participant interaction component. Although successful in making data immersed physical environments, the installation is a display of information and does not actively promote a relationship between the physical and the digital public realms.

physical citizens are able to view the live public transportation data being displayed, but unable to directly interact with it
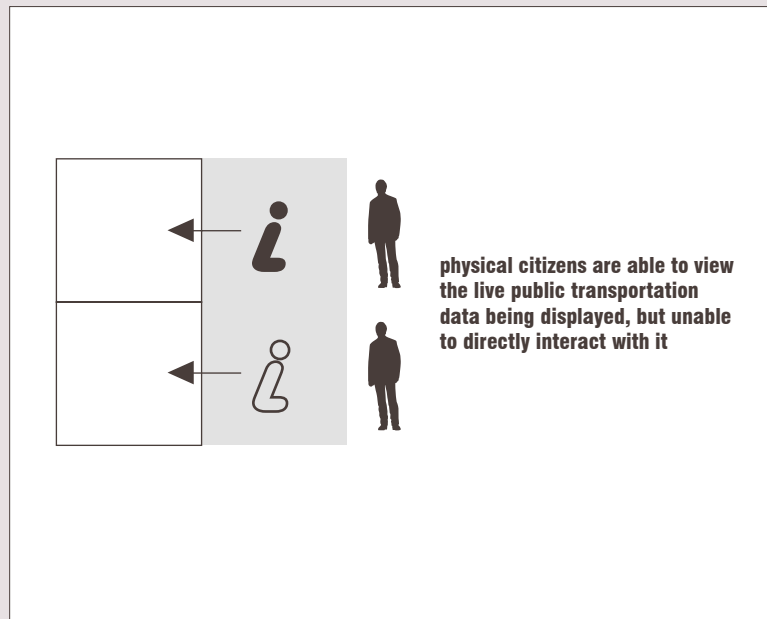
fig. 44 digital to physical data transfer
digitalscapes lens covered in Chapter 3

Drinking data, consumption patterns

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

Live drinking data of the Coca-Cola brand across America is recorded and translated into digital data. The pop dispensers are connected to sensors that live streams its dispense information and translates it into diagrams accessible through a website.

Each time the dispenser is used, its data is collected to determine what type of beverage, time and frequency or volume customers prefer in different regions. fig.45

Coca-cola used this data to make advertising and distribution decisions for their brands.
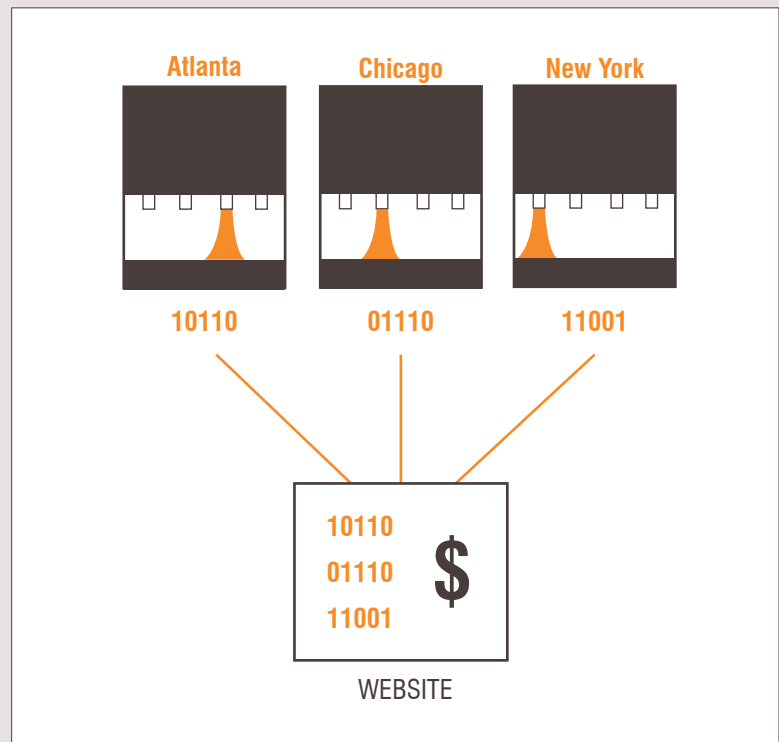
fig. 45 Drinking data (how it works)

DRINKING DATA(2014) by SENSIBLE CITY LAB

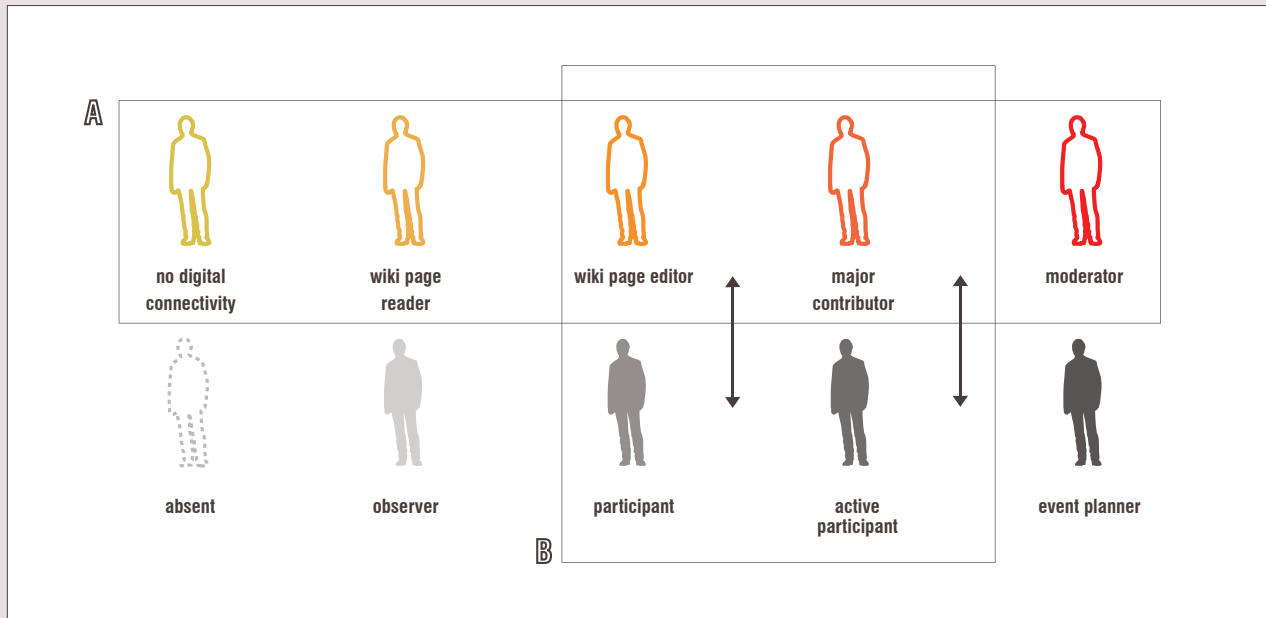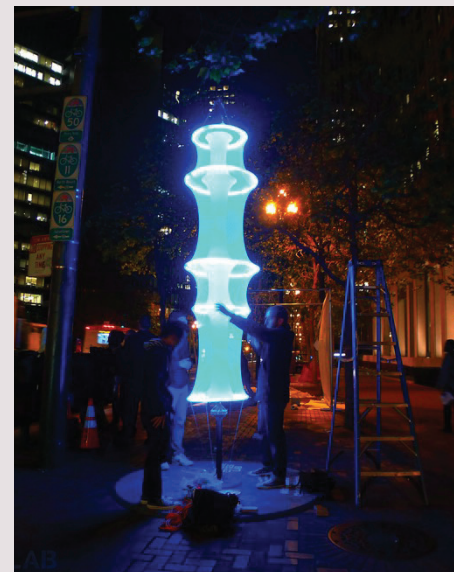INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .
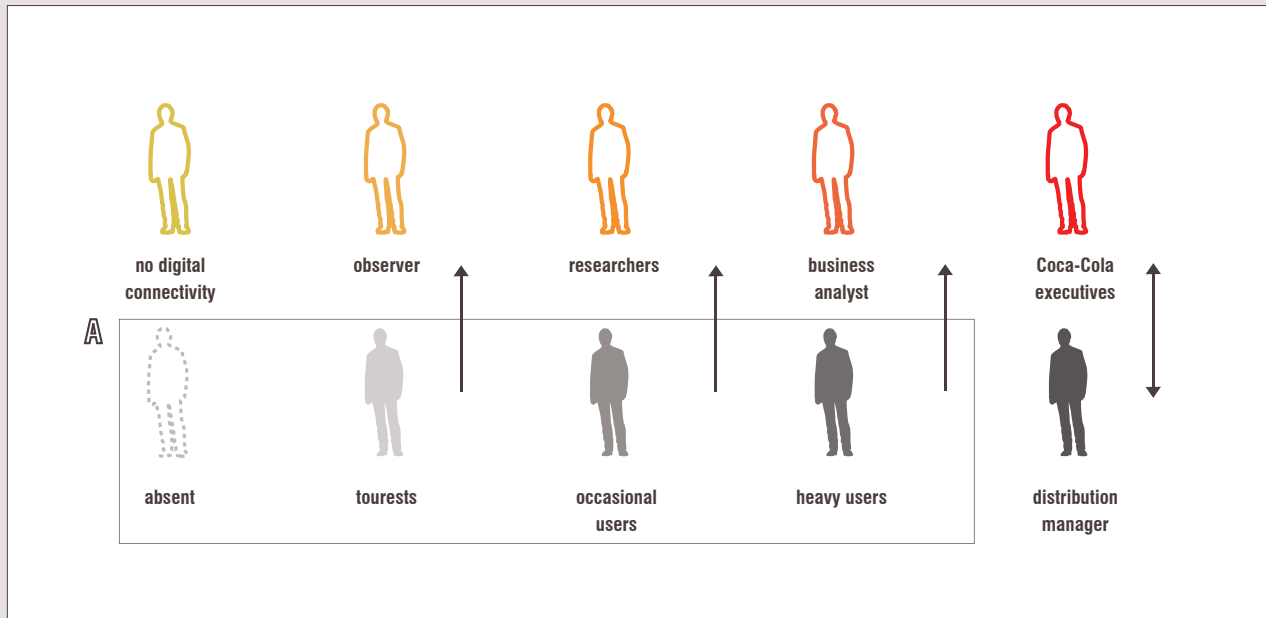
fig. 46 digital platform citizens and physical platform citizens involvement
digital platform citizens lens covered in Chapter 1

A | The data is extracted from the existing community and infrastructure and is a representation of an already existing consumer population. Although the participants are contributing data, they are either not aware or unable to obtain direct benefits received from the website; it is simply a behaviour analysis - there is no immediate and responsive connection between the moderators or distributors and the affected participants.

brand consumption graphic

In partnership with Coca-Cola, their machines were fitted with drinking data tracking devices. This type of data collecting would not be possible without the cooperation of large corporations with existing, well used physical platform infrastructure.

preferred brand consumption

volume/frequency of liquid dispensers

number of dispenses per day

dispenser locations
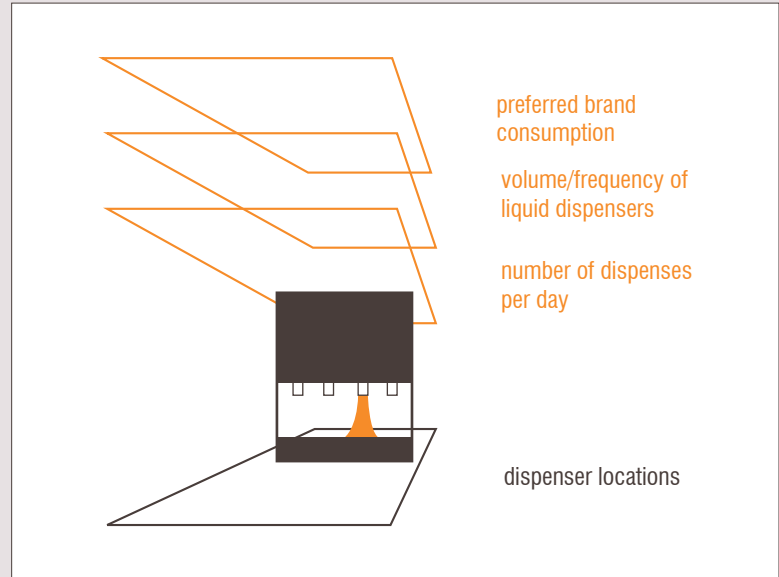
fig. 47 digitalscapes + physicalscapes
digitalscapes lens covered in Chapter 3

DRINKING DATA(2014) by SENSIBLE CITY LAB

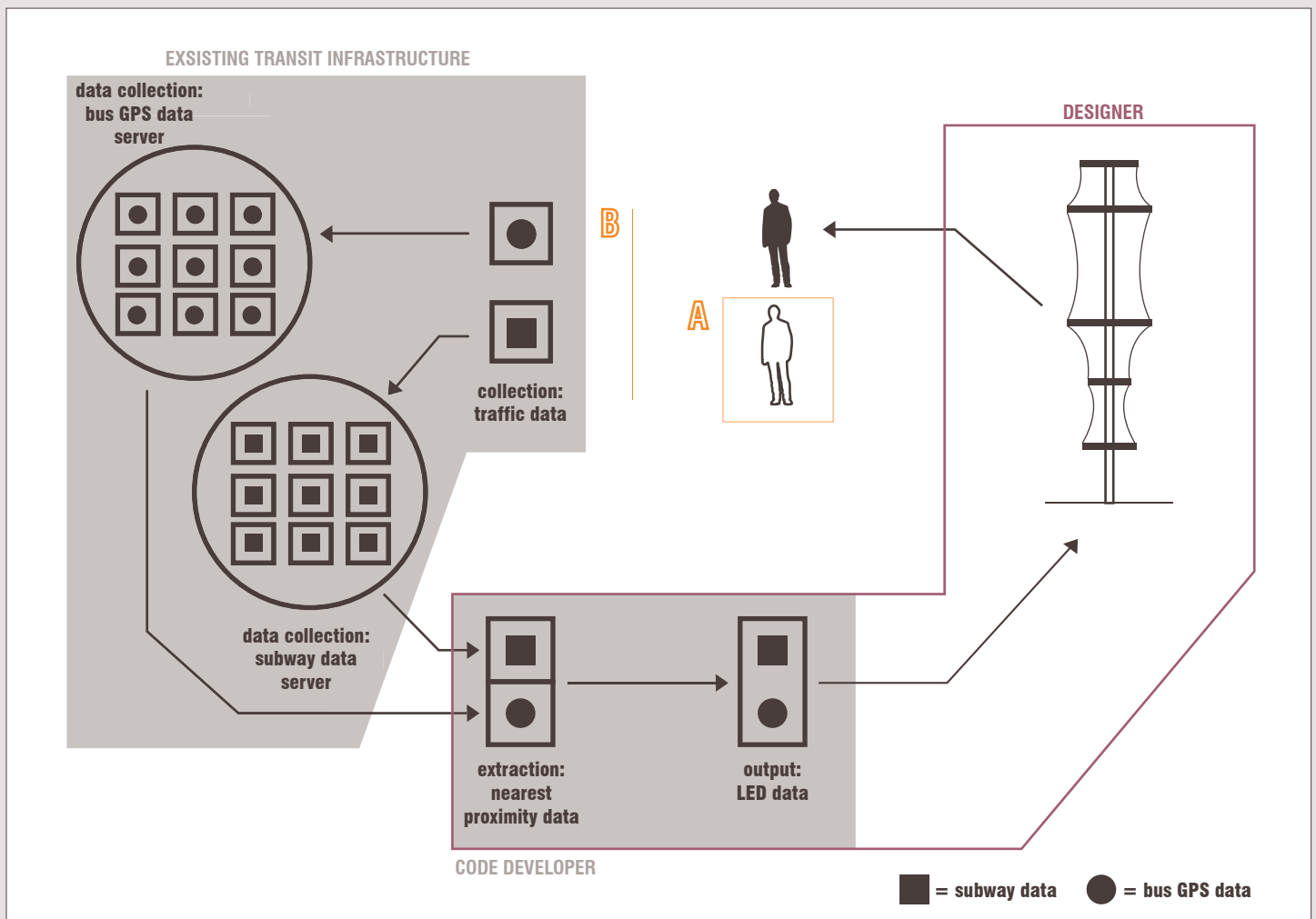INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

A

B

DESIGNER

collection:
dispenser data

data archive:
Coca-Cola
server

extraction:
data partnering

only   +   avg.   ... etc.

output:
graphic
presentation

graphic

CODE DEVELOPER

☐ = dispenser location   ▲ = brand input   ■ = dispense input   ● = time of dispense
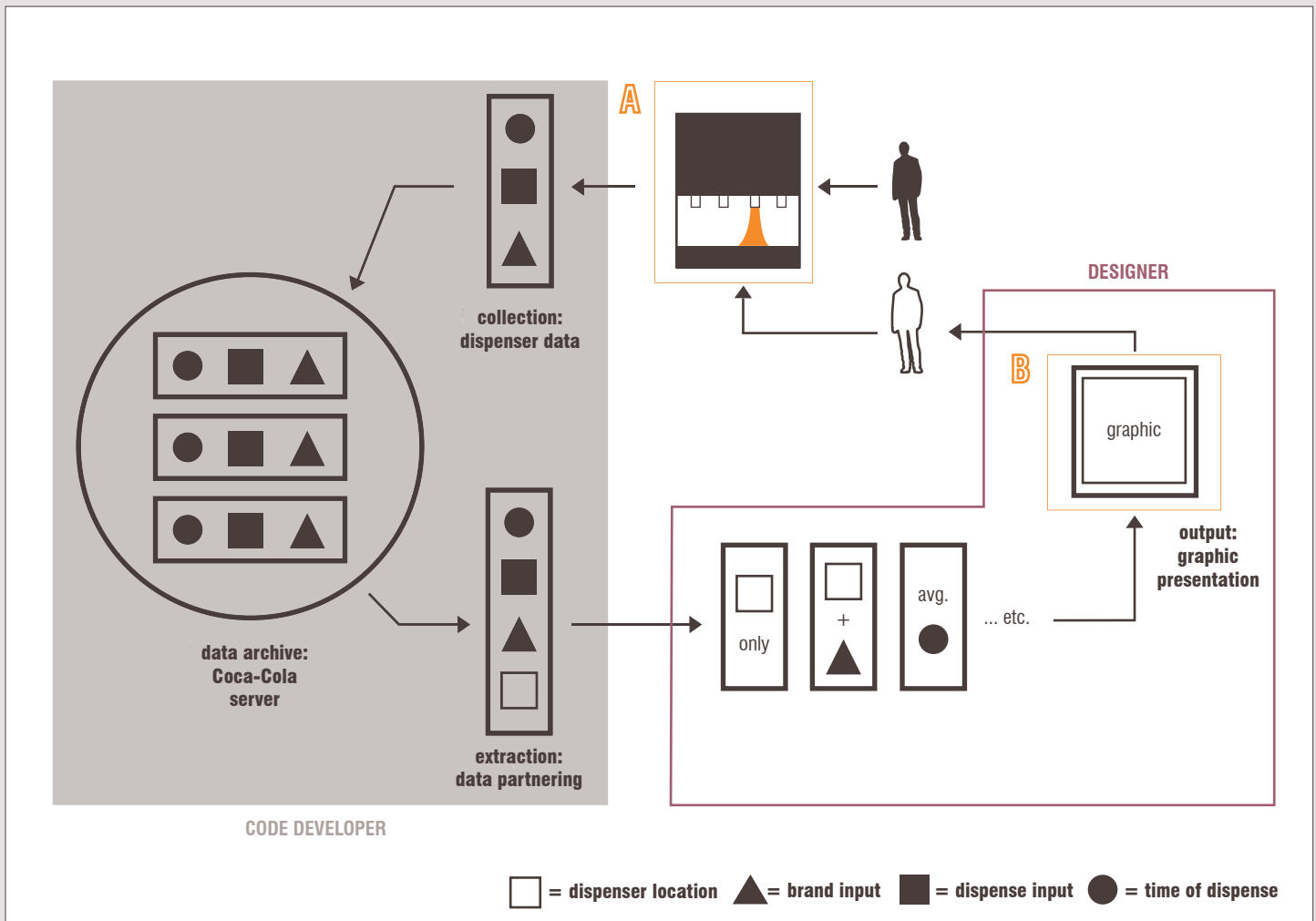
fig. 48 digestive cycles of data
digestive data cycle covered in Chapter 3

A Infrastructure of the dispensers already exists, a cooperation is required to extract data from them.

B The end product lives only in the digital realm, it is data about physical results that is represented as digital information.

DESIGNER Designers have to design the interface and method of displaying the information formed through the extraction and sorting process. It is through this design that digital platform participants are able to respond to the information being displayed.

The live drinking data project is a physical to digital data flow example that seamlessly integrates daily activities of drinking dispensers to generate data, this process is a good example of ubiquitous computing environment - however, the data is a one way transfer, where online viewers of the information may only witness the data and may not part take in manipulating or interacting with the involved physical environment. A digital community exists, but is an observer of data. The physical participants affect the transfer but are not engaged in the process - not benefitting from the data gathered.

digital citizens are able to view the live stream of drinking data

physical participants are directly interacting with the data generation but not aware that it is happening
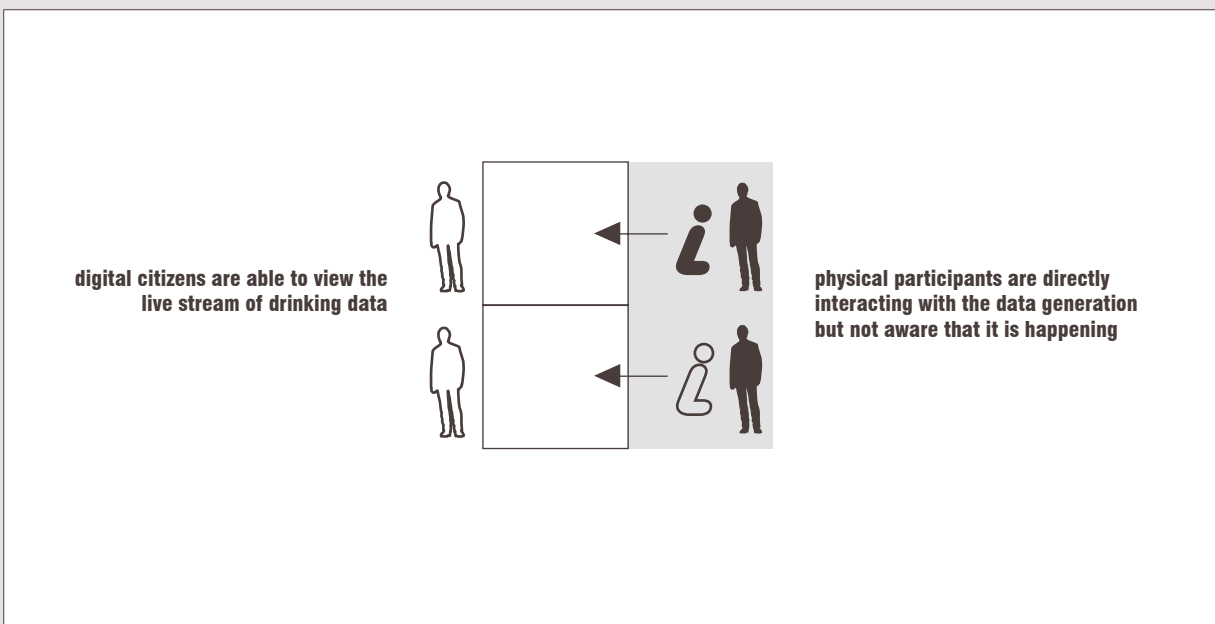
fig. 49 digital to physical data transfer
digitalscapes lens covered in Chapter 3

Gallery one media wall (*untitled* Photo: Local Projects)

Visitors of the museum are able to interact with different artifacts with digital tools, showing them in their natural context and additional information. Participants are also able to store their own curation throughout the exhibit for other visitors. People are able to vote and view online their favorite curation created by others, creating an archive of community driven museum curation.

Each individual is able to curate their own viewing progression of museum artifacts. The visitors are able to organize the order in which artifacts are viewed depending on the type of narrative they would like to create.fig.50

Other visitors are able to view the different curation narratives both in the museum and online. Within both platforms people are able to "like" and promote their favorite or their own narrative curation.fig.51
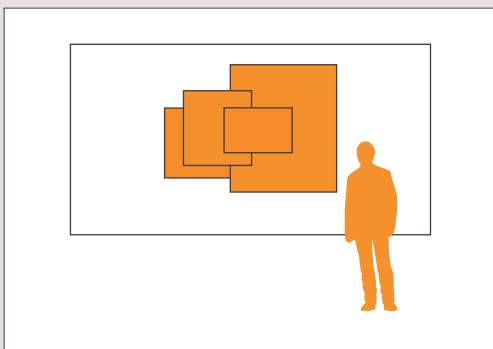
fig. 50 Gallery one media wall displaying curation order
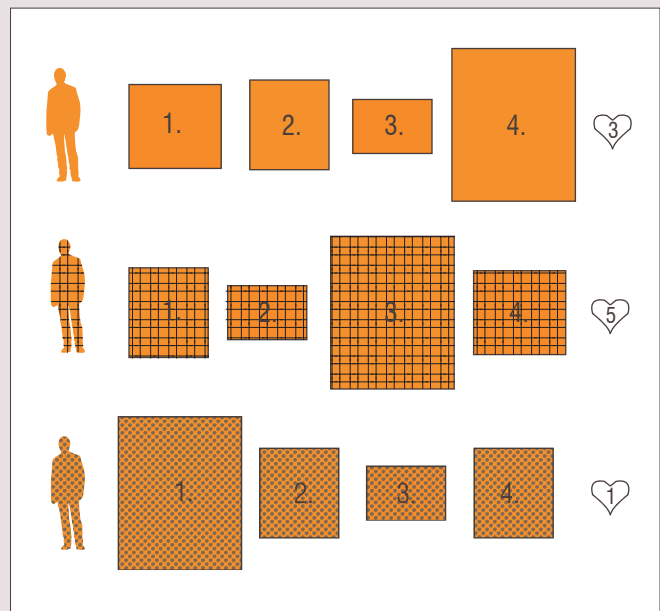
fig. 51 Individual curation order creation

GALLERY ONE(2010) by LOCAL PROJECTS

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

A

| no digital connectivity | observer | light user | content creater | alpha user |

| absent | tourest | frequent visitor | heavy user | museum moderator/community leader |
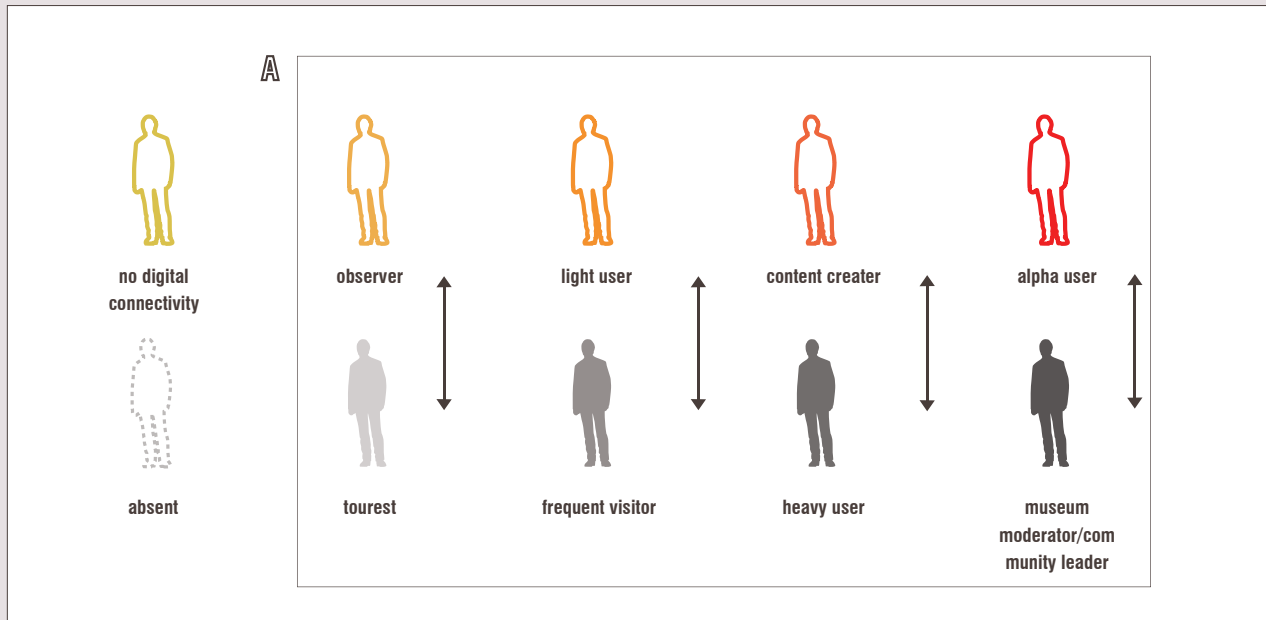
fig. 52 digital platform citizens and physical platform citizens involvement
digital platform citizens lens covered in Chapter 1

A To encourage the growth of the museum's digital platform community, the design tied online activities to the physical artifacts within the museum. The individual actions of either platform citizens begin to affect the other, by improving the contents of the museum or enhancing its interactive features.

Gallery one display (*untitled* Photo: Local Projects)

The museum responds or reaches out to its online community, creating a platform that allows connectivity between the artifacts in the museum and its online platform citizens. The discussions and opinions generated by visitors extend outside the walls of the physical scape, extending the museum experience to more than just an observation activity.

visitor's opinion on the artifacts and its curation

visitor's narrative curation

museum web content

museum floor plan

artifacts catalog

circulation within the museum
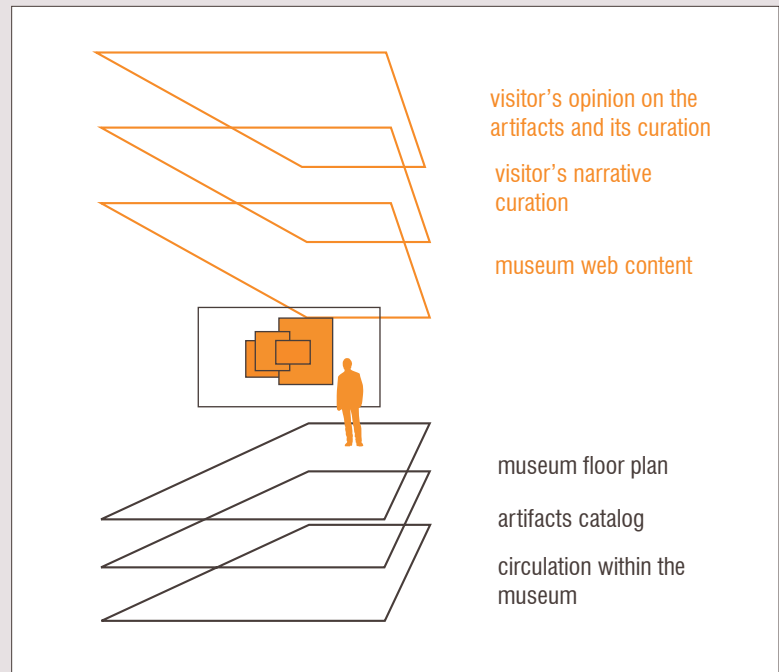
fig. 53 digitalscapes + physicalscapes
digitalscapes lens covered in Chapter 3

GALLERY ONE(2010) by LOCAL PROJECTS

INTRODUCTION . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

MECH. ENGINEER

B

collection:
physical content

collection:
web content

DESIGNER

A

data archive:
museum server

priority sortingd

isplay output

output:
layout
graphics

web   physical

CODE DEVELOPER

◯ = profile   ▢ = curation pattern   ▲ = # of likes   ■ = artifact code   ● = # of views
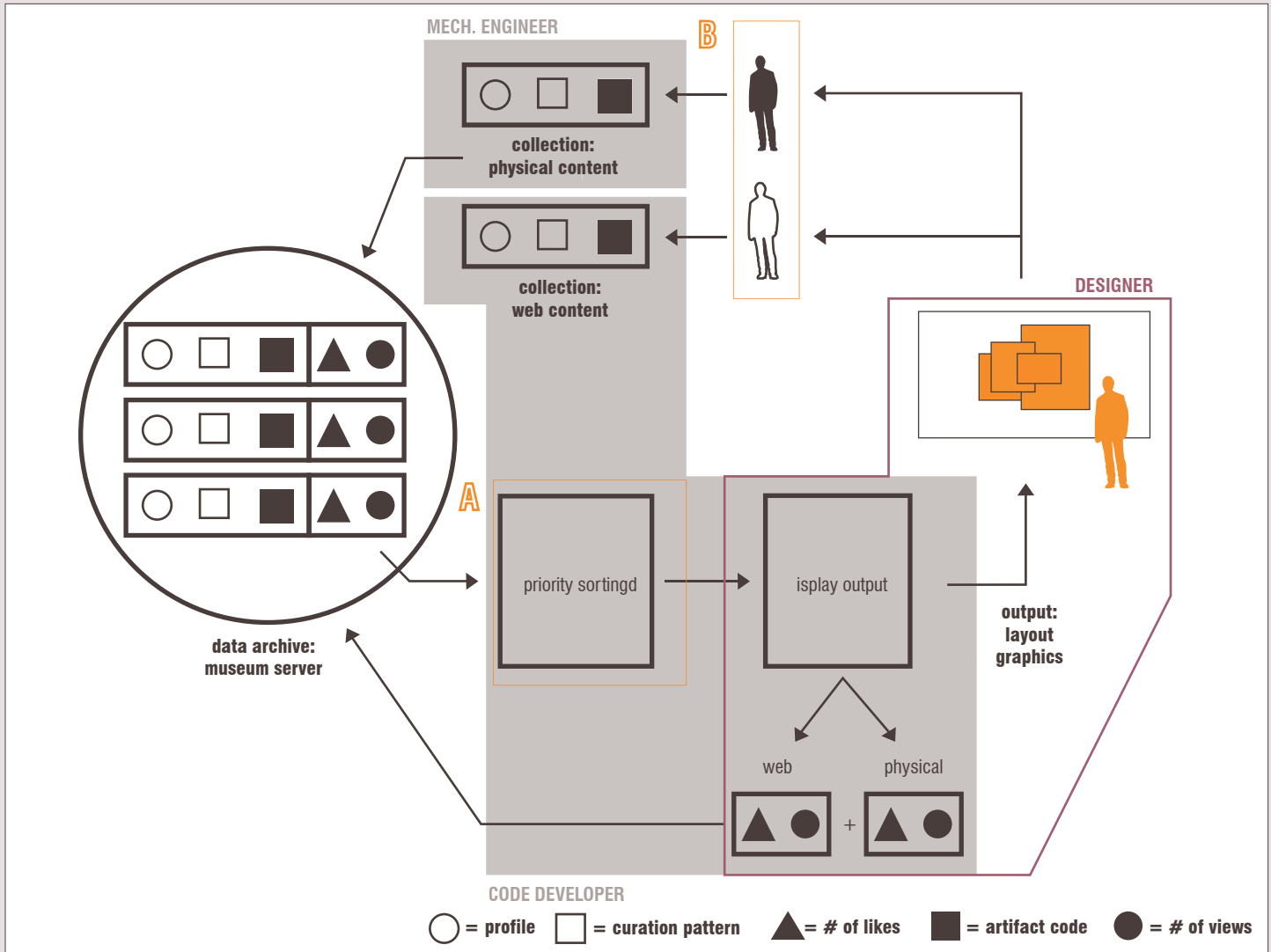
fig. 54 digestive cycles of data
digestive data cycle covered in Chapter 3

A Priority sorting considers not only the content and author, but the reflective task of understanding the behaviour and performance of both physical and digital platform citizens.

B The installation affects both physical and digital platform citizens. This creates a loop effect through a dual platform configuration of data collection and output presentation.

DESIGNER It is the designer's role to determine how the formed information is represented both physically and digitally. Due to the dual platform configuration, it is important that the designer understands how the participants in either platforms are aware of the existence and the activities of the other.

Although the gallery exhibition displays both digital and physical interactive components, it is primarily a one way physical to digital relationship. Although physical users are able to interact directly with the exhibition and create online data, digital citizens are only able to witness the data created.

there is live information exchange of views and likes from both platform citizens

there is live output of curation and content creation from both platforms citizens

there is passive output in the archives of past curation content, profiles, and artifacts discussed from both platform citizens
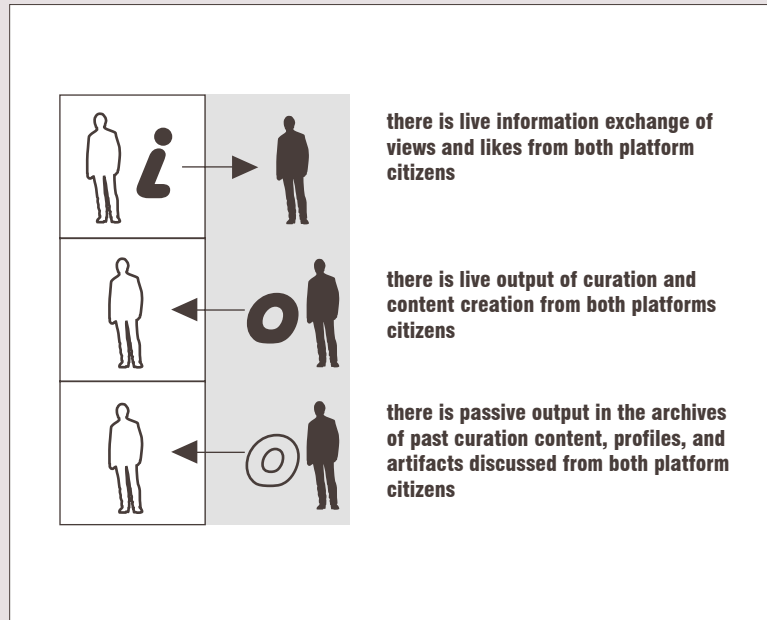
fig. 55 digital to physical data transfer
digitalscapes lens covered in Chapter 3

DUNDAS SQUARE DESIGN STUDY
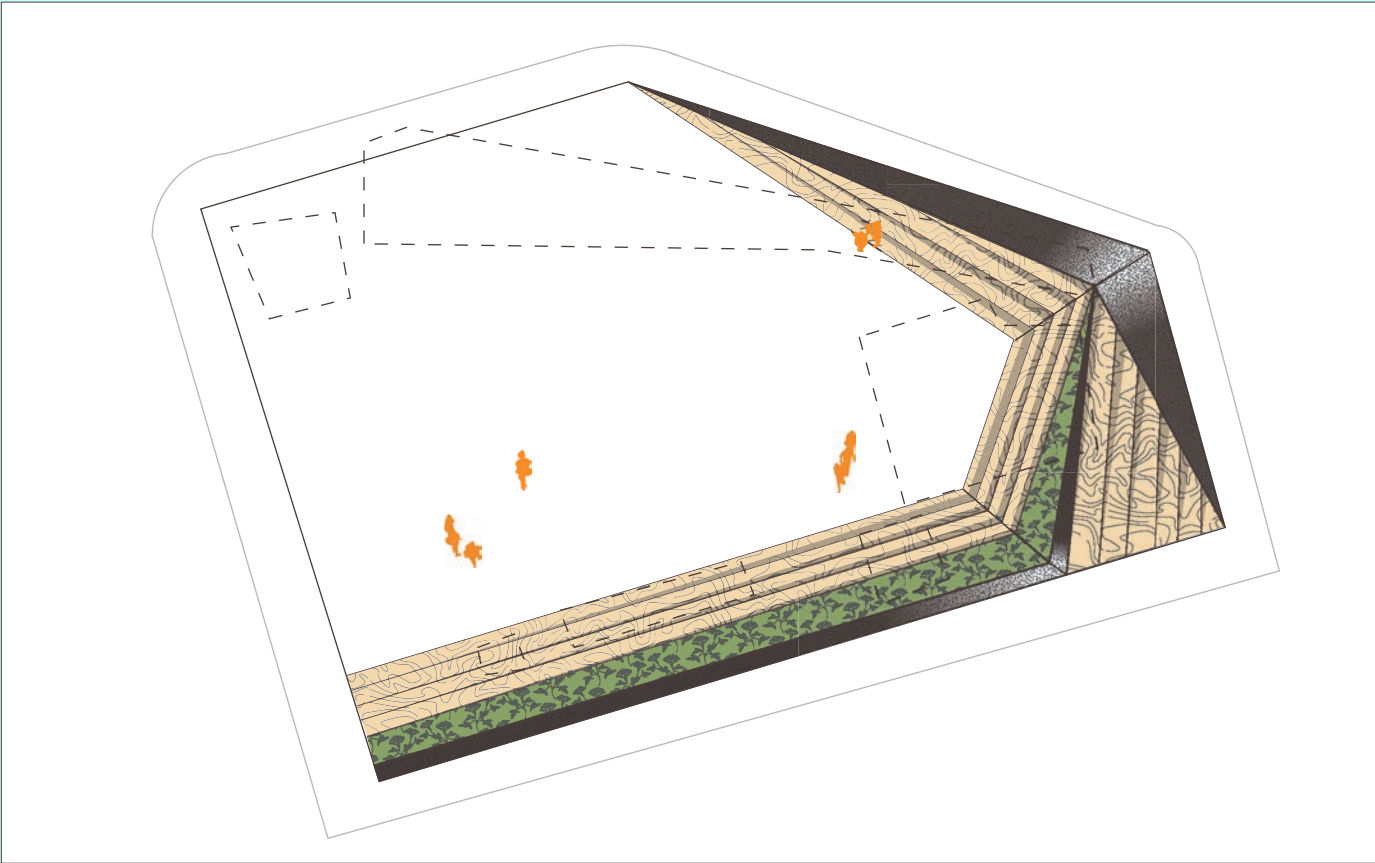
Dundas Square observation stage design prototype

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

The observation stage is a study of designing for the social behavior of people-watching that occurs in public squares. The act of people-watching encourages the delicate dance between observing and being observed. To design for this type of behavior, the design must accommodate people's preference in how they prefer to be observed or participate in the act of observing. This behaviour is one of the leading forces behind the success of online social media platforms. It allows careful curation of the citizen's identity and their activities. The design combines the two platforms to allow cross-pollination between physical and digital observation to occur simultaneously. The focus of the design is to present a stage in which online activities regarding Dundas Square can be made to be exposed and experienced by physical platform citizens.

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

The design intent is to provide three methods of observation currently supported by social media platforms. Interactive observation allows both participants (observed and the observer) to be in a mutual state of transparency in their engagement. Private observation allows the observer to be anonymous to the one being observed. Mutual private observation is when both parties are anonymous and unaware that they are being observed. These observation techniques are integrated into physical design to mirror online viewing habits and accommodate its practice in the physical platform.[fig.56]

interactive observation   private observation   mutual private observation
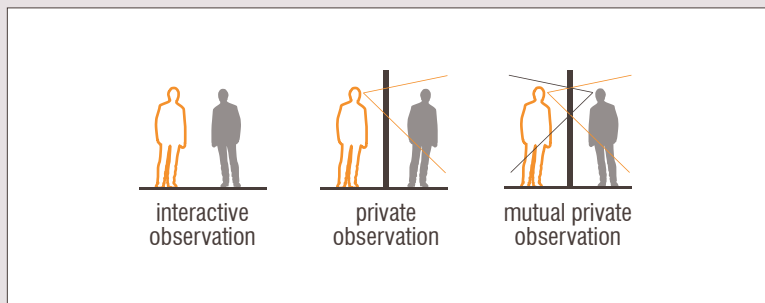
fig. 56 observation methods

location of observation stage
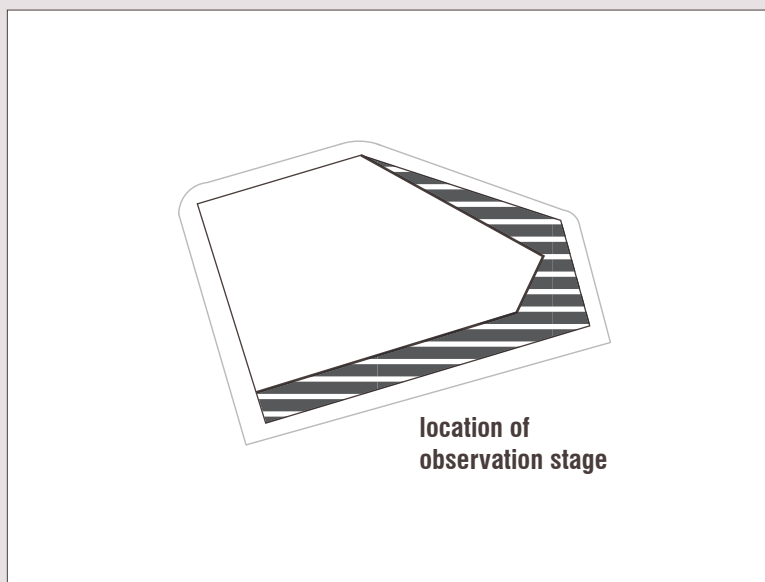
location within dundas square
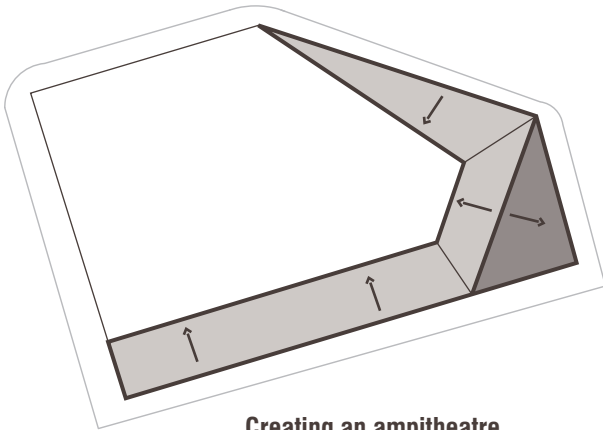
Creating an ampitheatre
creating a slope generates two types of
privacy, one that is easily viewable, the other
a more private environment.
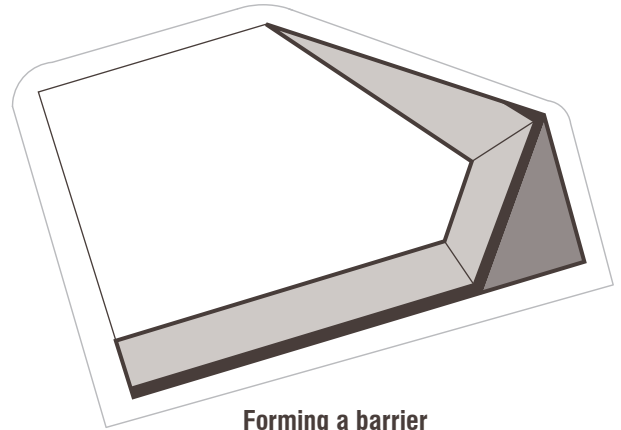
Forming a barrier
Creating a barrier provides a physical
"wall" to create a distinctive
distinguishable physical spaces.
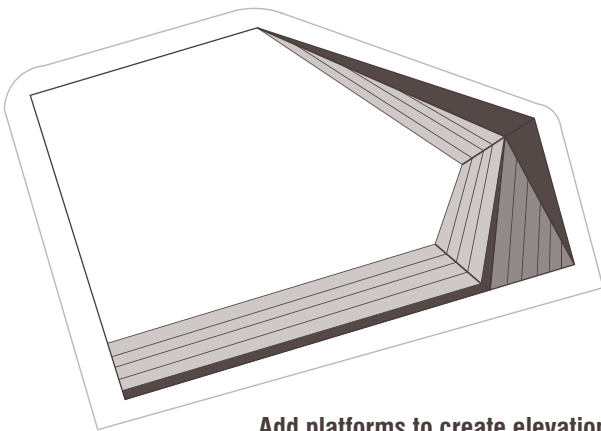
Add platforms to create elevation
generating platforms to act as
seating for observers.
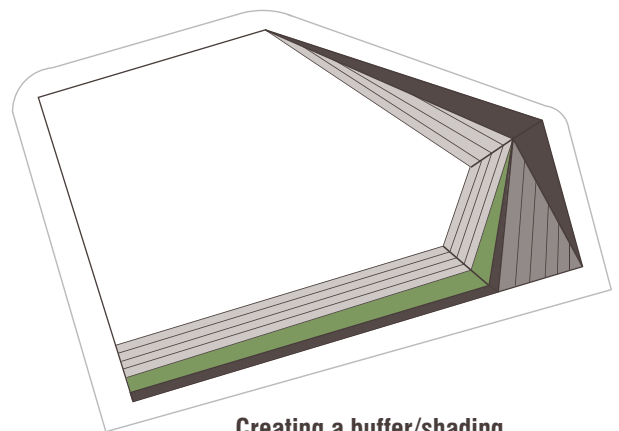
Creating a buffer/shading
adding greenary to act as a buffer
to noise and provide shading for
observation decks below.

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES .
DIGESTIVE CYCLE . DATA TRANSFER .
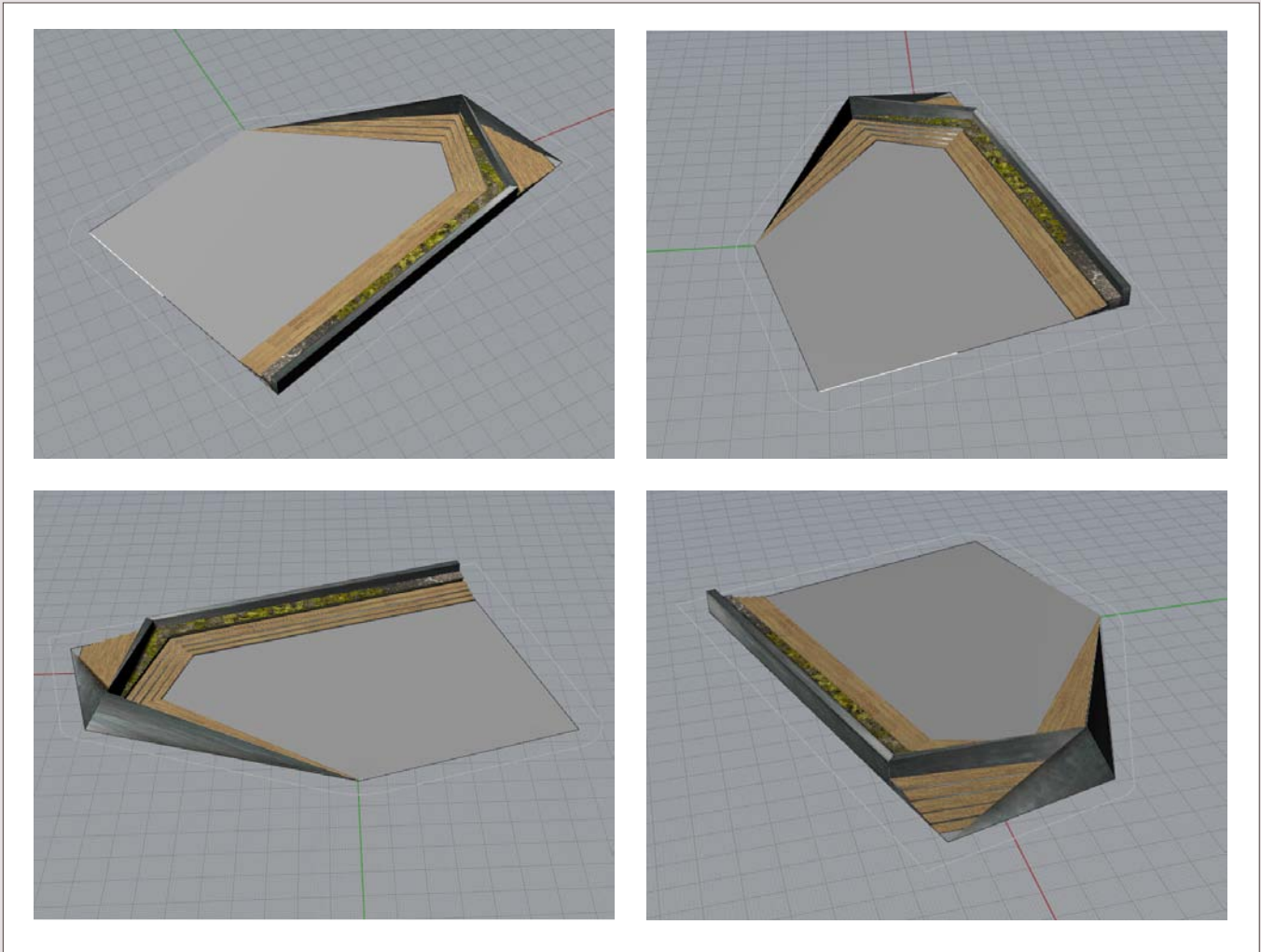
3D blocking of the observation deck

A section

B section

C section

photo archives

live track of photos (time log)

types of users

Instagram

user trends
(#, events, locations)

Dundas Square (@ydsquare) Instagram layers

post archives

live track of post (time log)

types of users

Facebook

user trends
(#, events, locations)
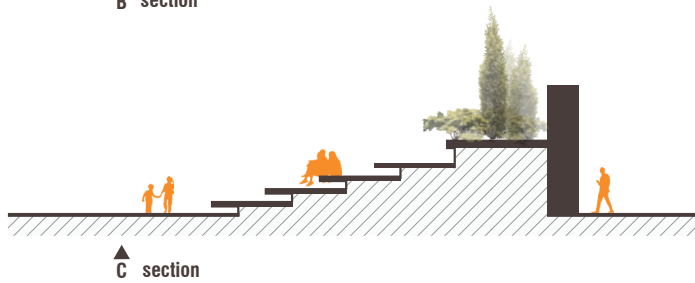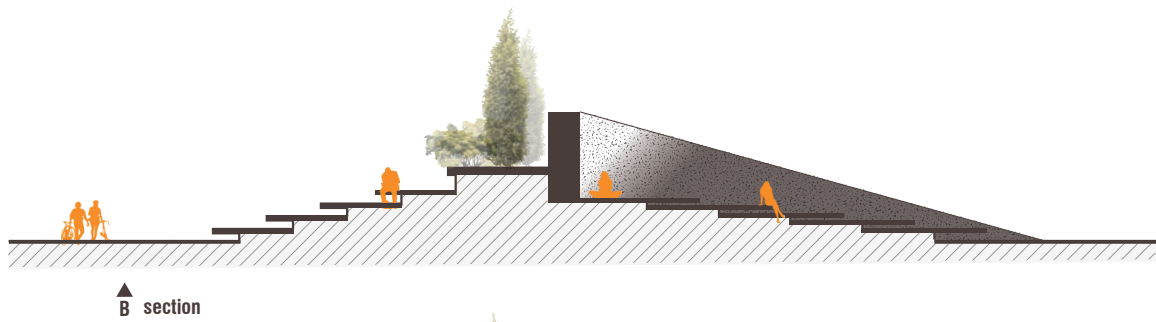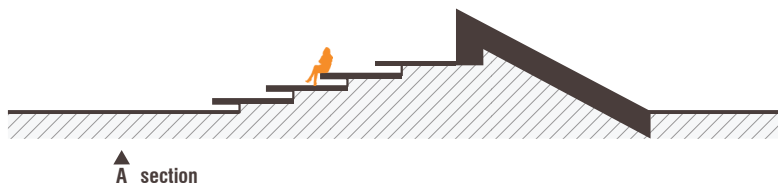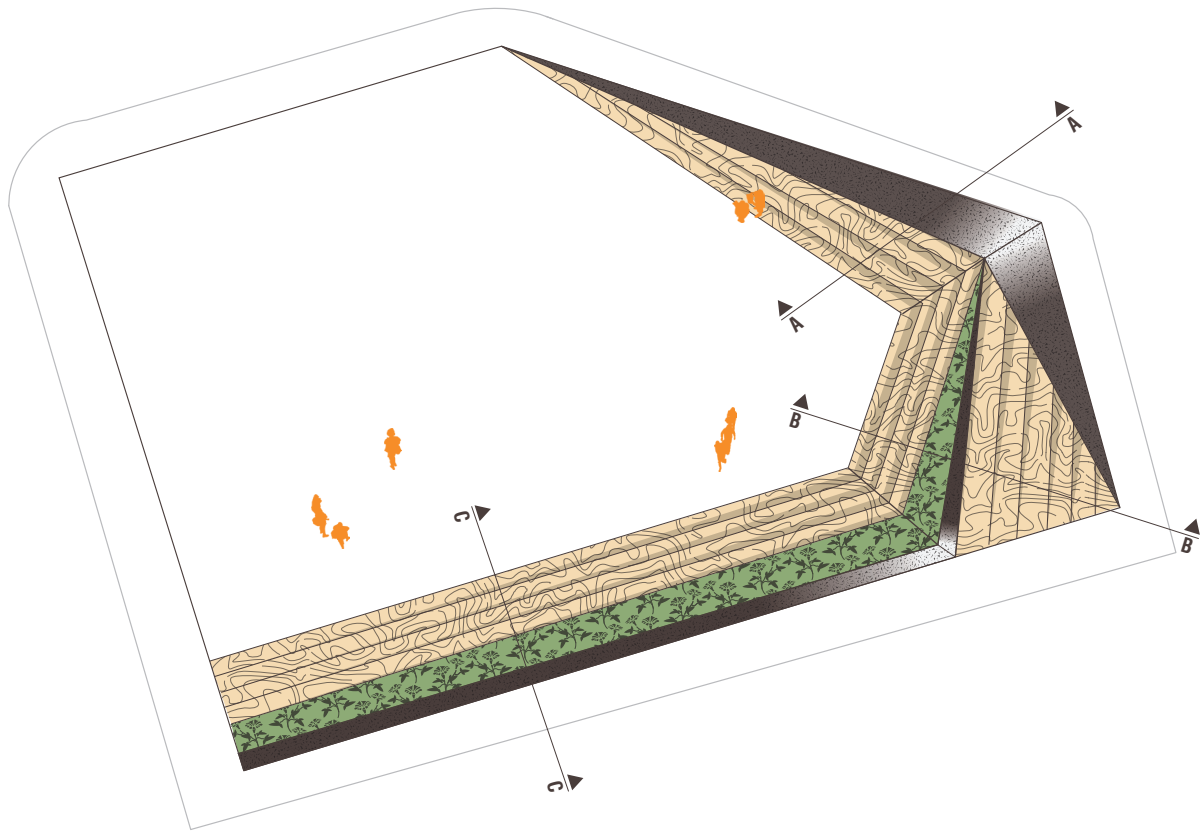
Dundas Square Facebook page layers

up vote/down vote

post archives

live track of posts (time log)

types of users

reddit

user trends
(#, events, locations)

Reddit Dundas Square layers

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES .
DIGESTIVE CYCLE . DATA TRANSFER .

798 followers
of @ydsquare

Instagram account @ydsquare allows digital platform citizens to archive photos which detail what kind of activities they enjoyed and have attended in Dundas Square. With enough accounts consolidated, the data becomes a powerful tool for social trend observation.

11,192 followers
163, 301 check-ins
2, 300+ reviews

Facebook account of Dundas Square allows occupants to create content within their page. In addition to the interactive component, due to its outreach capability, the Facebook account is well suited for public announcement of important information and upcoming events.

65, 879 subscribers
Avg. 200+ readers
at any moment

Reddit users provide digital content of Dundas Square as well as tallying popularity among the subjects covered. These subjects may include past events or general activities and hold valuable user input about how they would like to experience Dundas Square.

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES .
DIGESTIVE CYCLE . DATA TRANSFER .

Facebook and Instagram feed of Dundas Square

Facebook and Instagram feed on the observation stage allows live forecast of online activity regarding Dundas Square. The screen is made to allow physical platform citizens to understand online trends that relate to Dundas Square.

Physical activities screen

The back of stage screen features a wall that displays a video stream of Dundas Square. Although this view is observed in private, behind the divider barrier, digital platform citizens are able to view the video through Dundas Square online platforms.

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY | SUNDAY |
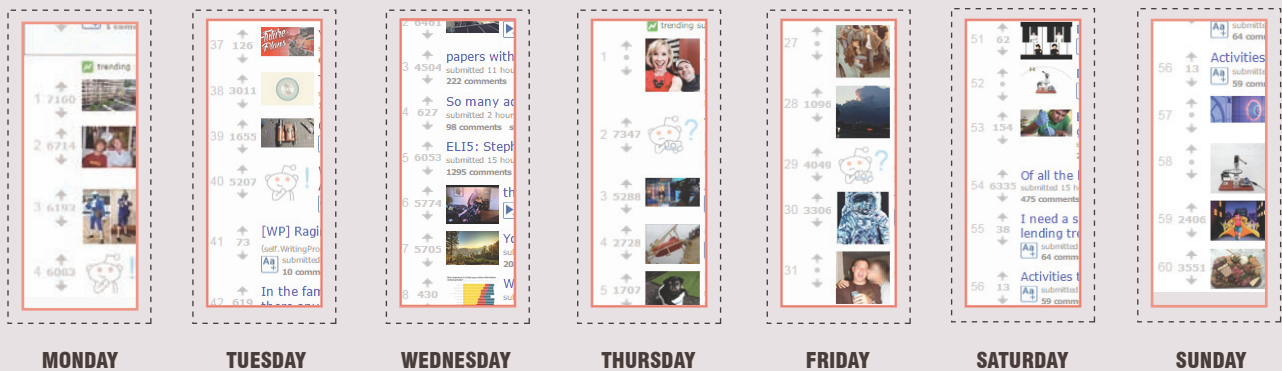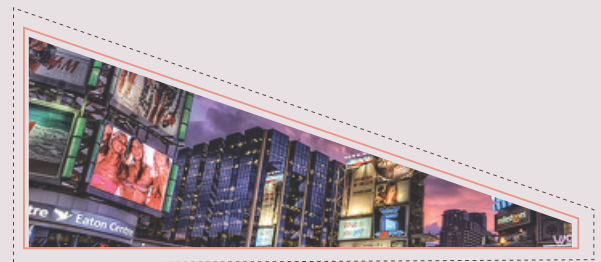
Weekly highlight of Dundas Square reddit activity

Using reddit as a bulletin board, the screens provide a physical platform to log and chronologically organize the online reddit data.
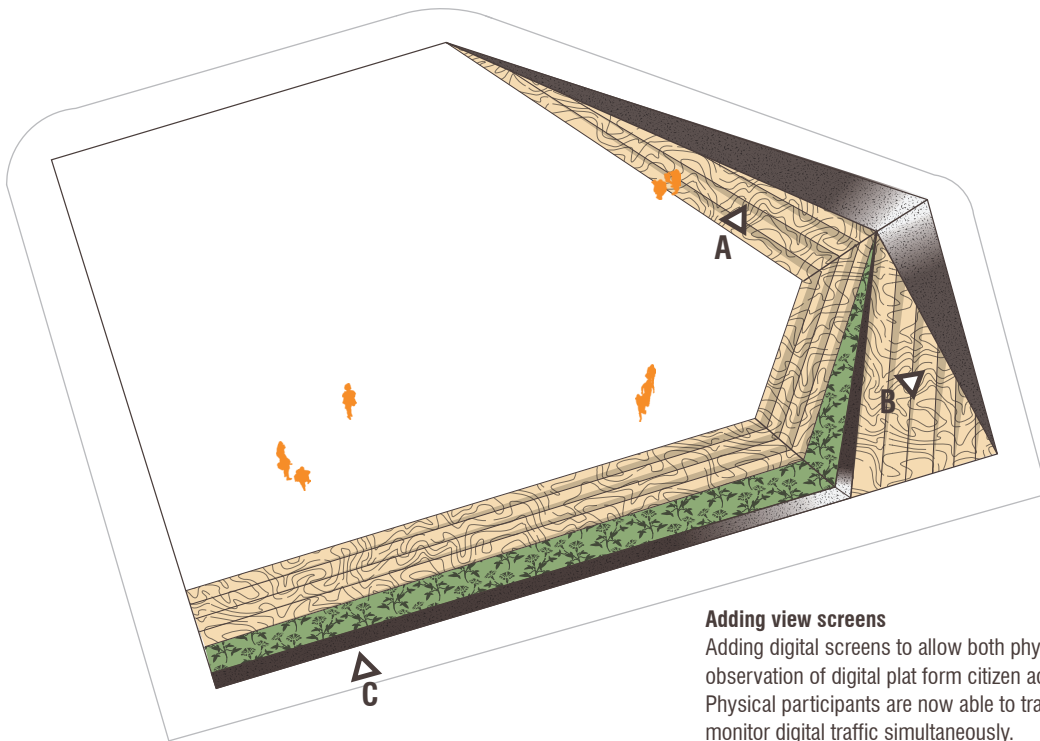
Adding view screens
Adding digital screens to allow both physical observation of digital plat form citizen activities. Physical participants are now able to track and monitor digital traffic simultaneously.
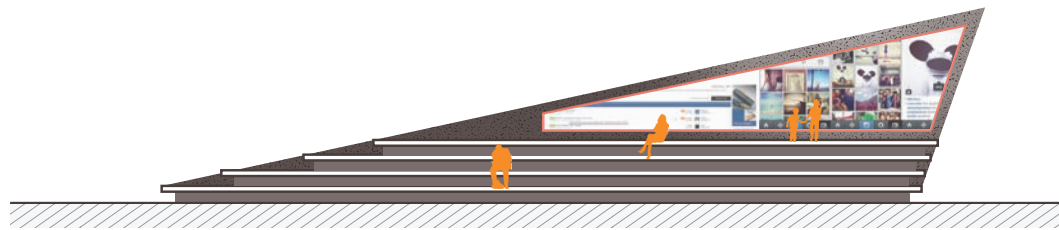
A   elevation
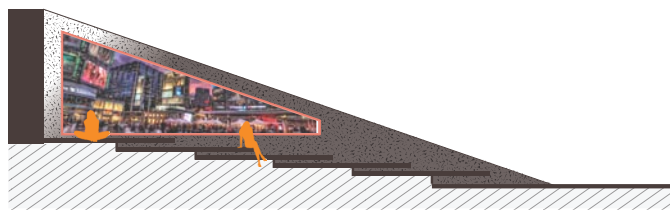
B   elevation

C   elevation

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES .
DIGESTIVE CYCLE . DATA TRANSFER .

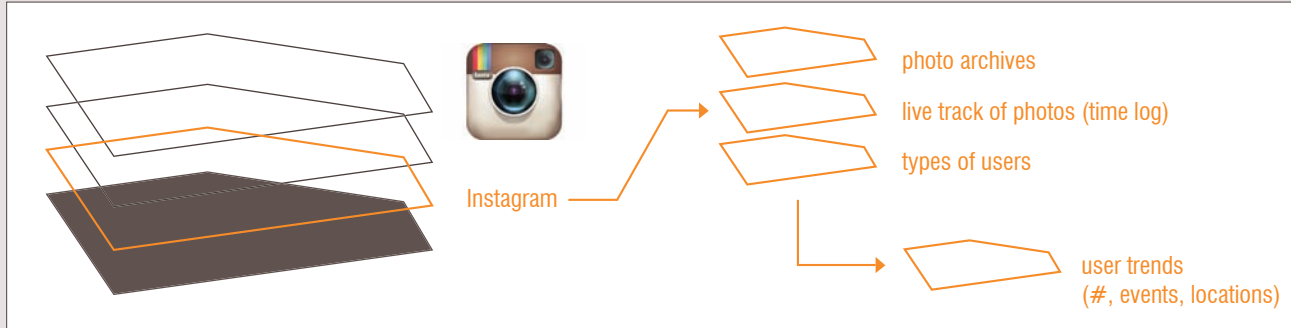### Digital platform placement

The placement of the screens allows different observation of space enabled by social media involving activities in Dundas square. These screens activate the occupants of Dundas square to be involved with the digital platforms linked with the space. The screens become a window that reveals the space`s digital identity to its physical occupants.

interactive observation

private observation

mutual private observation

Vision for observation stage
Observation stage allows physical occupants to understand and be a part of the digital activity involving Dundas square. They can simply observe the traffic of digital activities or be involved in the live stream of interaction with Dundas square`s digital citizens.

CASE STUDY . CONCLUSION .

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES .
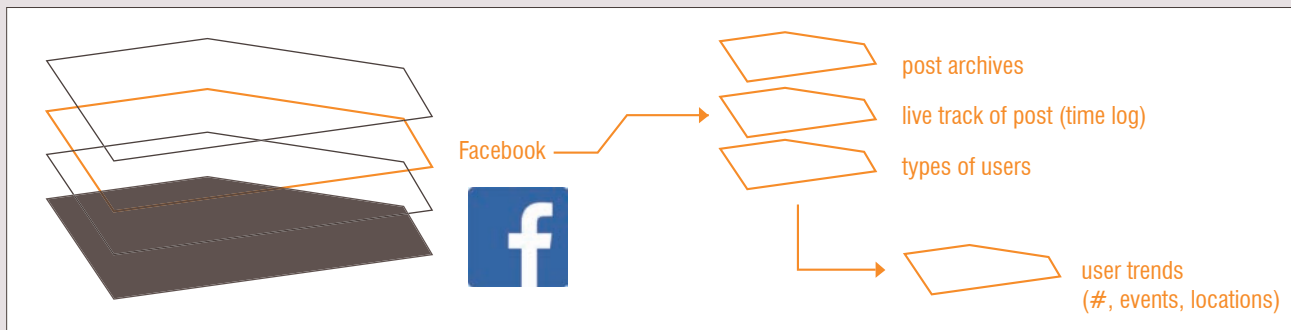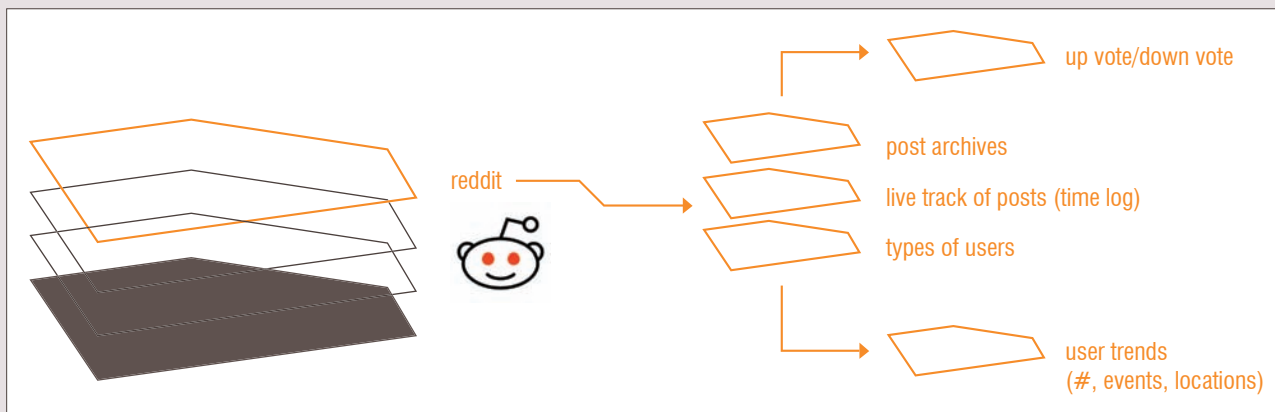DIGESTIVE CYCLE . DATA TRANSFER .
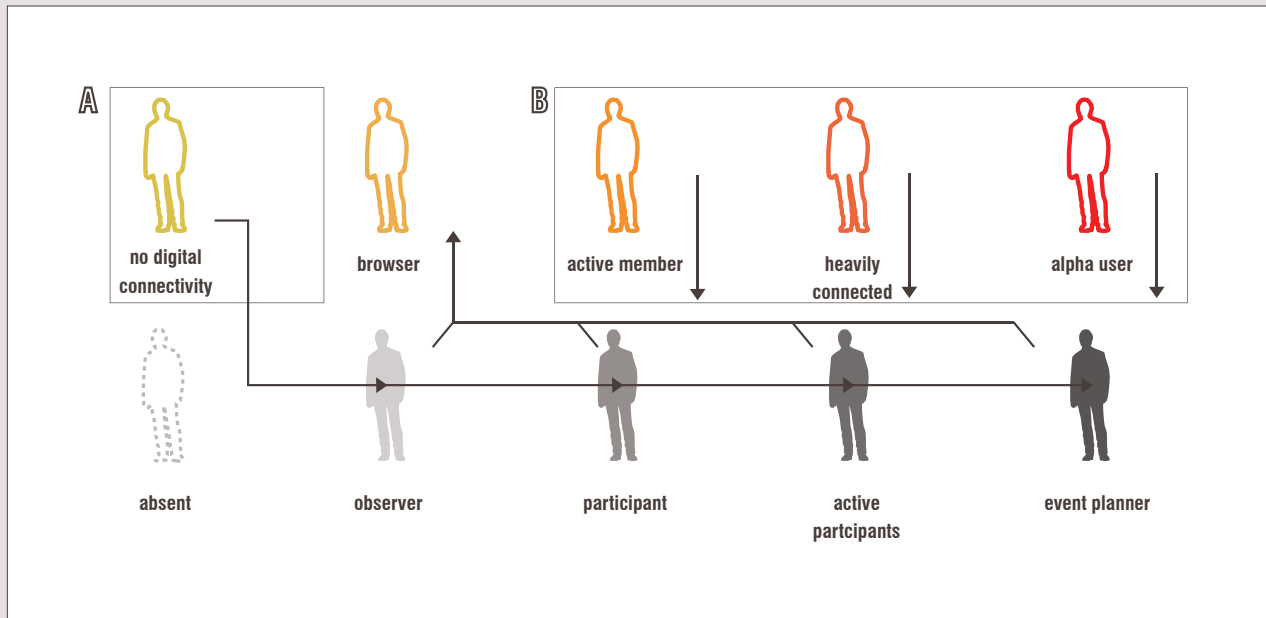
fig. 57 digital platform citizens and physical platform citizens involvement
digital platform citizens lens covered in Chapter 1

A People with no digital connectivity at any level of physical
platform citizenship, are able to browse through online content.
This opportunity allows people who are not connected or
refuse to create an online identity to participate in the online
observation process.

B The transfer of online data over to the physical realm creates
community engagement in both physical and didgital platforms
that support Dundas Square.

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES .
DIGESTIVE CYCLE . DATA TRANSFER .

reddit

Facebook

Instagram

up vote/down vote

post archives

live track of posts (time log)

types of users

user trends
(#, events, locations)

post archives

live track of post (time log)

types of users

user trends
(#, events, locations)

photo archives

live track of photos (time log)

types of users

user trends
(#, events, locations)

fig. 58 digitalscapes used for the design
digitalscapes lens covered in Chapter 3

CASE STUDY . CONCLUSION .

OBSERVATION STAGE DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES .
DIGESTIVE CYCLE . DATA TRANSFER .

EXSISTING WEB INFRASTRUCTURE

A

DESIGNER

collection:
reddit, Facebook,
Instagram

B

CODE DEVELOPER

data archive:
reddit, Facebook,
Instagram servers

extraction:
posts related to
Dundas square

output:
display
instructions

◯ = time log   ▲ = trends (#, events, locations)   △ = up vote/down vote   ■ = post content   ● = author

fig. 59 digestive cycles of data
digestive data cycle covered in Chapter 3

A Physical occupants do not directly affect the input, but they become digital platform citizens when they log on to digital platforms that support Dundas square.

B The data input and its collection method already exists, the servers of Facebook, reddit and Instagram continues to store digital citizen inputs. The existing infrastructure is there and available, it is up to the designer to determine how it is extracted.

DESIGNER The role of the designer is to design the type of data extracted, and decide how it is processed. Digital platform citizens and their contribution are designed to physically be represented.
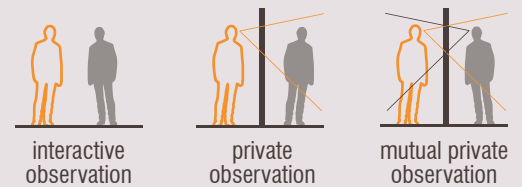
INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

Data transfer in the observation stage is restricted to online data being displayed in the physically built environment. Although the technology is not new (it is essentially a display board integration), the design harnesses the already exsisting population of digital platform citizens and its online social media infrastructure. In digital to physical data transfer, the physical particiapnts have no way to interact in creating digital content or affect its users.

the information rearding time log, author, and supporting info. is transfered to the physical realm

the physical citizens are not direct participants but observers of digital information

the digital content output is displayed live

the physical particiapnts are not directly affecting output, they are observers.
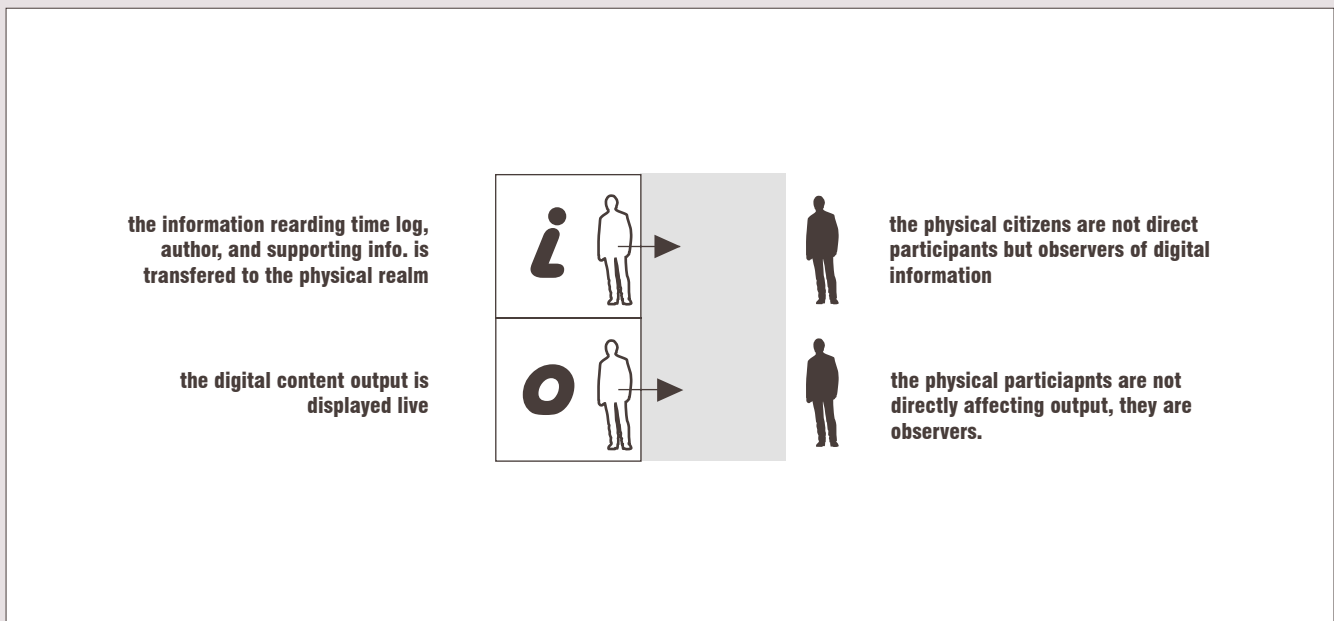
fig. 60 digital to physical data transfer
digitalscapes lens covered in Chapter 3
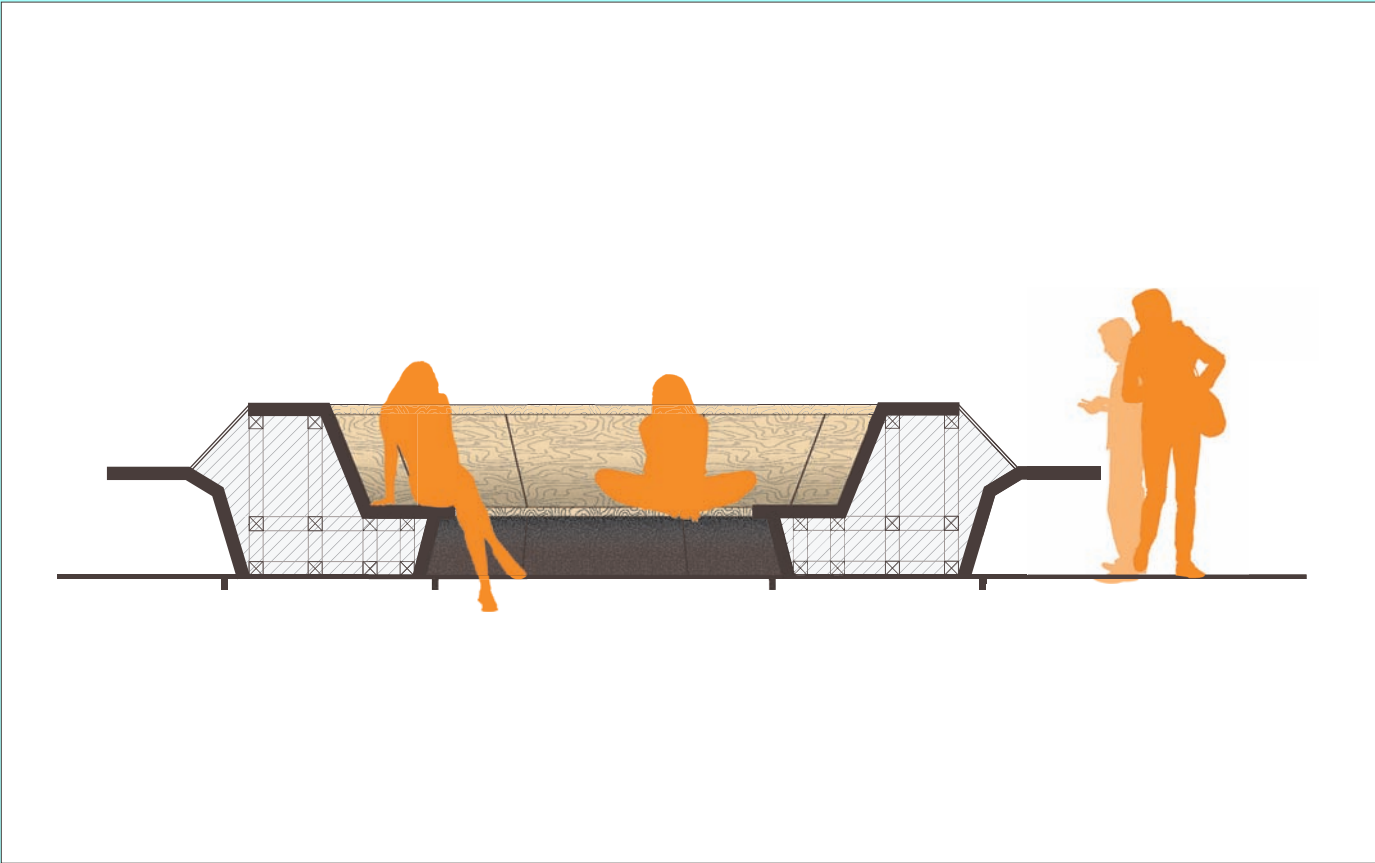
Interactive seating concept

Interactive seating in Dundas square is a study of how furniture in a public space can "sit" both digital and physical citizens of public space. The prototype investigates what the dual platform citizen interaction would be and what kind of digital platform integration it would require to create an immersive communication between the two platforms. The vision seeks to explore the opportunities that arise when combining the two platform citizens and how it can be done to encourage dual platform interaction. Furthermore, the concept explores how digital platform infrastructure should be integrated not as an afterthought but as the initial goal in the exercise of design.

INTERACTIVE SEATING DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

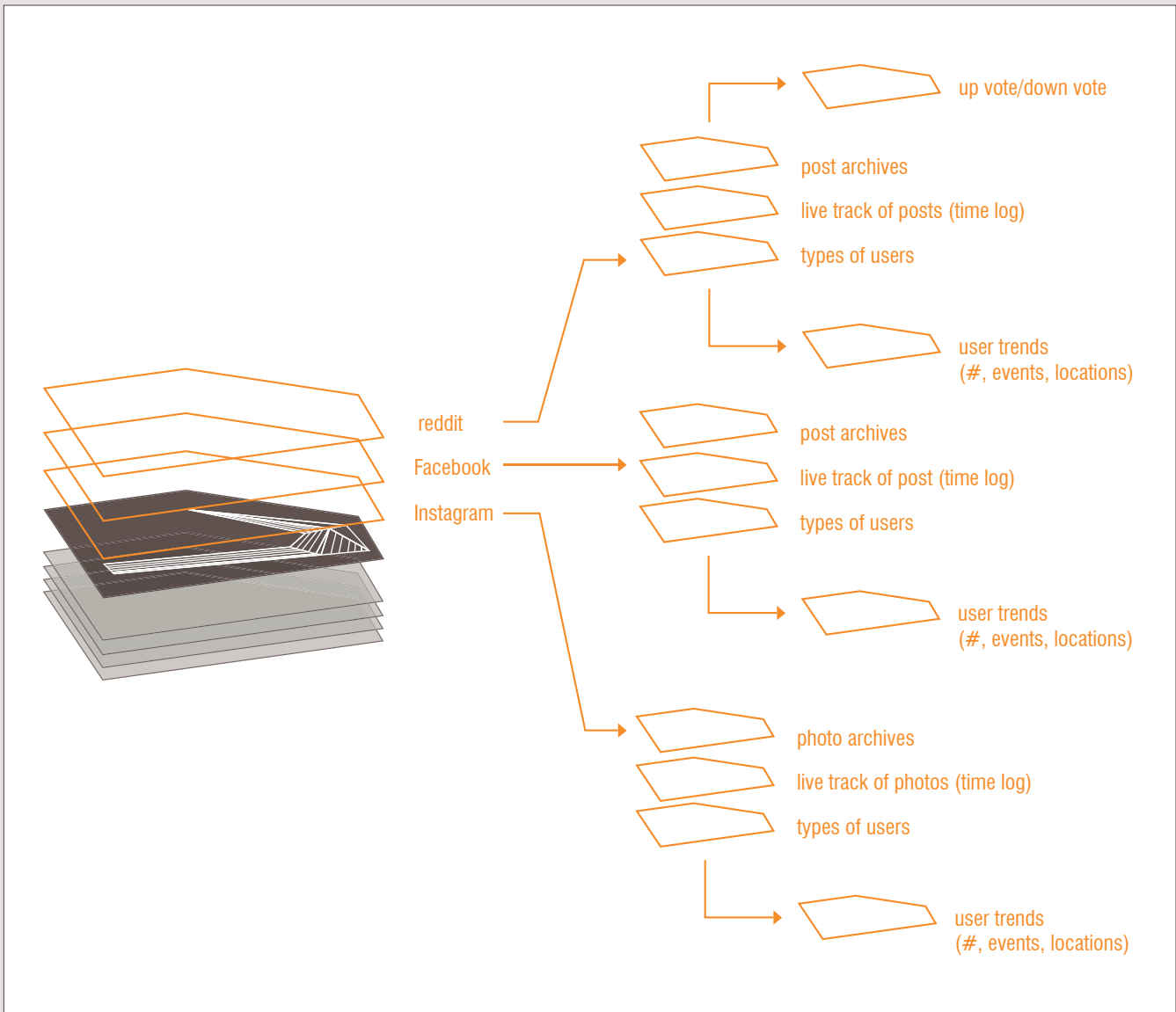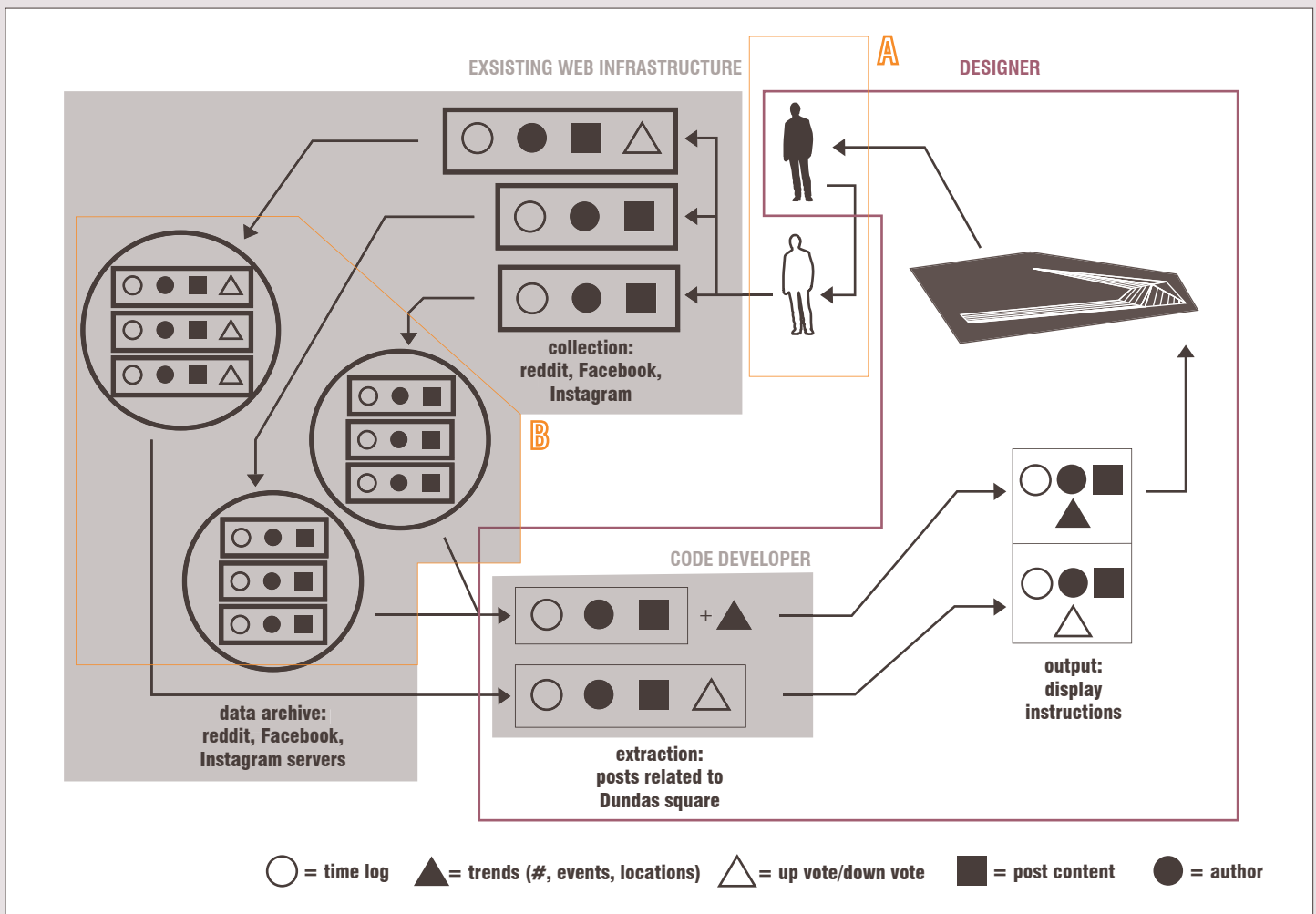The interactive seating design takes inspiration from online social behaviours that make people come together to mingle. The key component being: advertising personal interest or history and finding groupings or likenesses within a group of people that occupy the "space." In integrating this method of people grouping to both physical and digital platform citizens, an immersive display is born, providing connectivity between platform activities where its interaction is fully transparent and create immediacy in communicating between platforms.

location of interactive seating

location within Dundas Square

advertising   common groupings
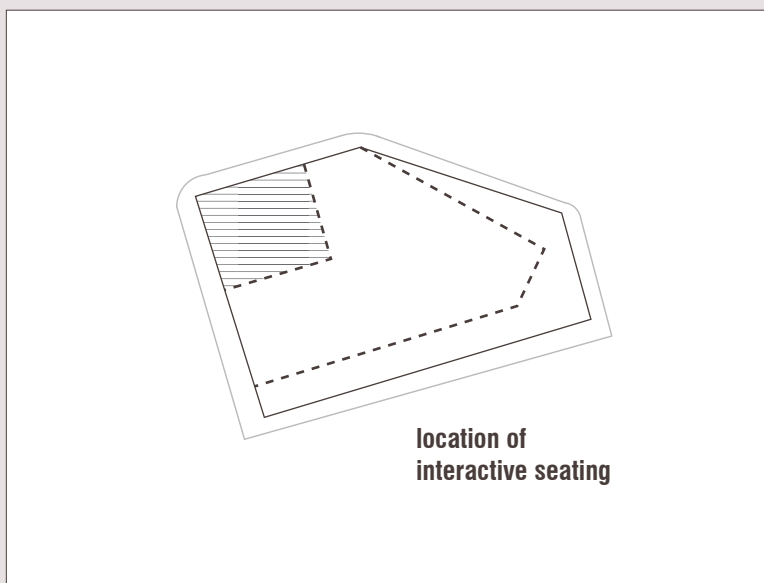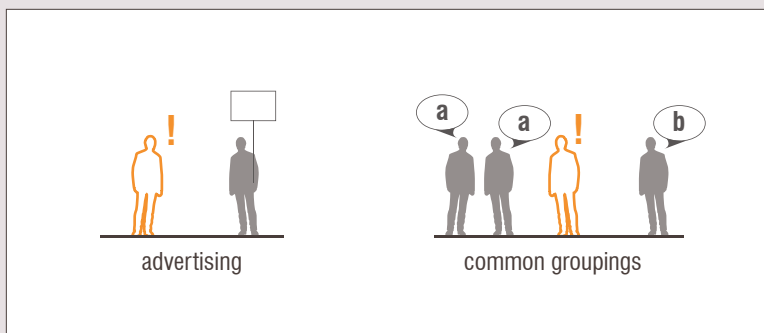
fig. 61 online social behaviors in social media
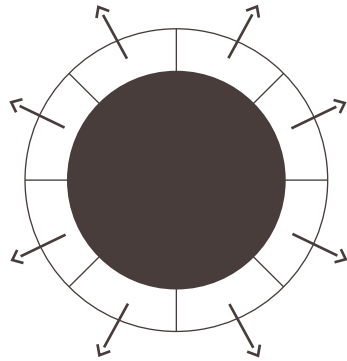
Radial design
Seating arrangement in a radial fashion allows maxium exposure to the public. Interactive occurances are from individuals authoring individual content and gaining exposure to the public.
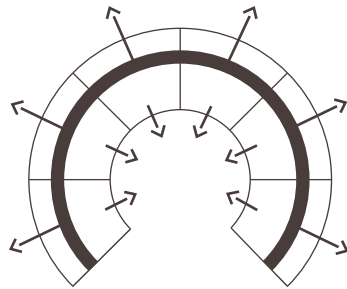
Radial + internal grouping deisgn
Seating arrangement in a radial fashion allows maxium exposure to the public. Interactive occurances are from individuals authoring individual content and gaining exposure to the public.

seating form design

INTERACTIVE SEATING DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE .
DATA TRANSFER .

seating surface

booth
armrest/tabletop

screen

outward
table surface

LED strip
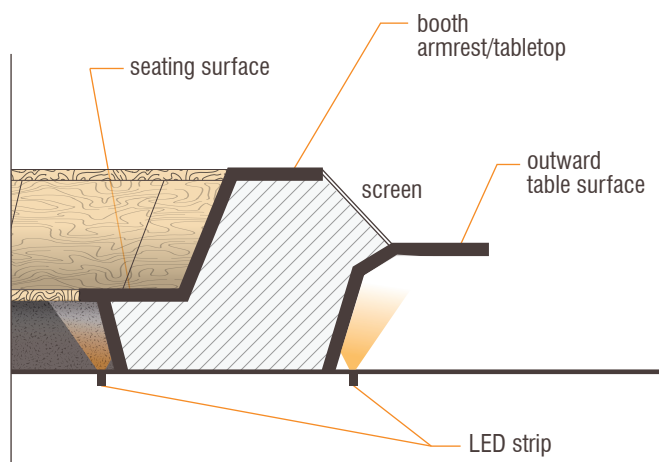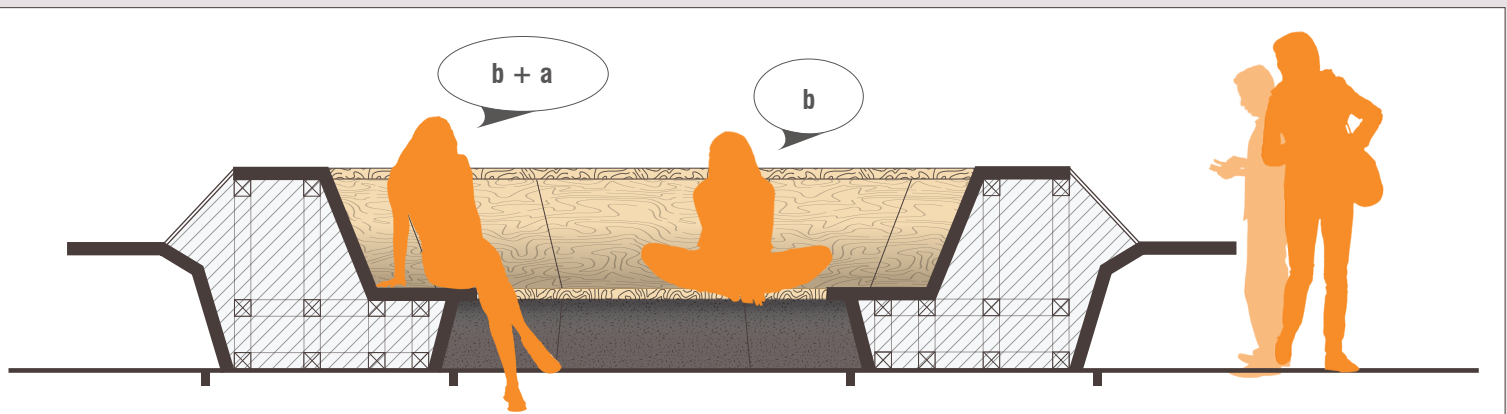
Booth design
The booth is designed to accommodate seating for the physical occupants of Dundas square. The seats immediately display digital footprint info about the person that sits on it, allowing other people who are sitting down as well as passersby to see the occupant both physically and digitally.
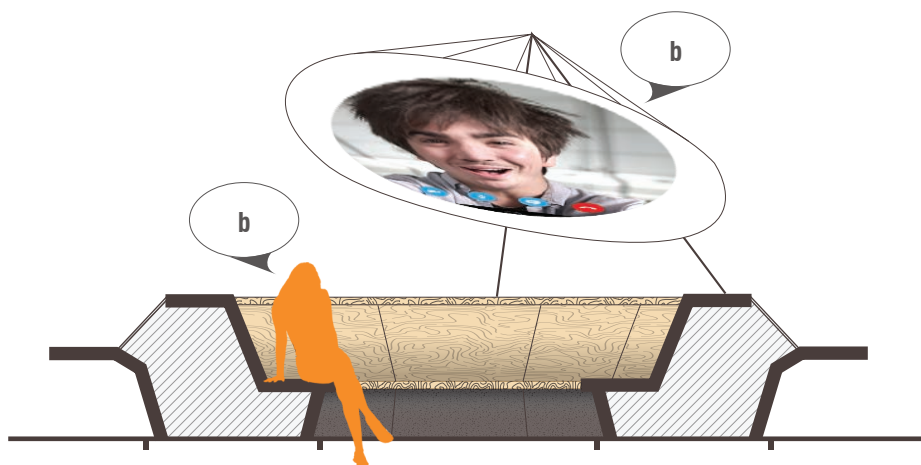
Shading as a screen
An optional shading mechanism can be implemented to provide a projection screen. This allows digital platform citizens to log on to Skype and call the booth that they are interested in conversing with. Online platform citizens can track who the current occupants of the seats are and view their digital footprint history.
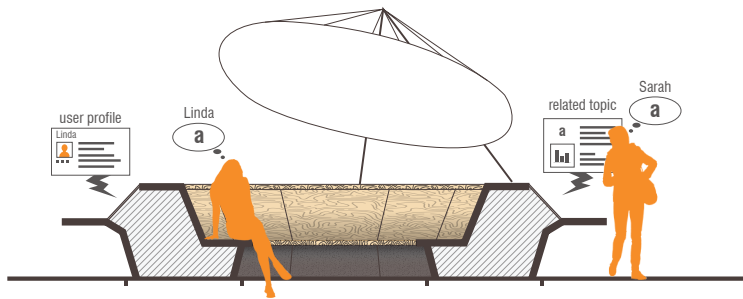
Forming relations
The booth displays information regarding the current occupant's user profile and content. This allows quick glances to become well informed in the person's physical as well as their digital identity.
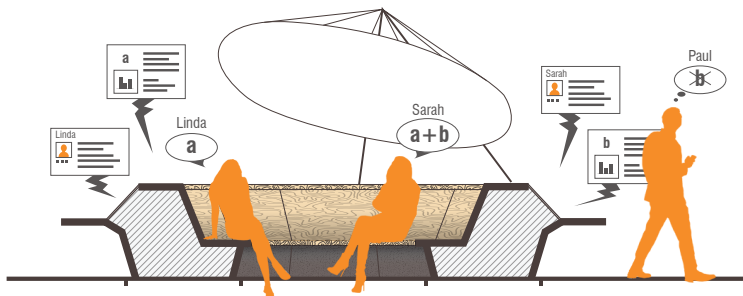
Finding similarities
As more people join, the content of the booth can become either more focused or diversified. (depending on the conversation and individuals involved within the booth)
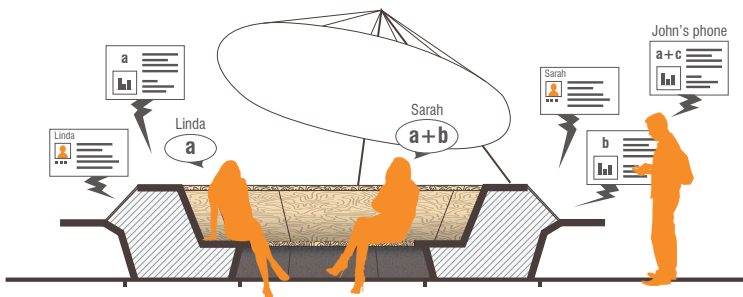
External devices
Digital or physical traits of the content may attract different types of people to get together. They are strangers but are able to quickly identify that they have certain traits that are common.
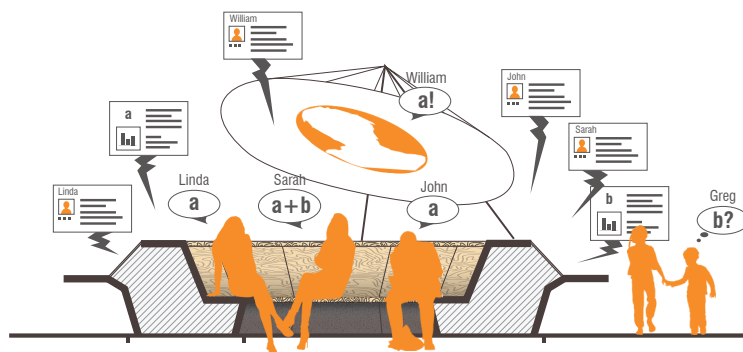
Online participants
People in the digital realm are able to participate within the booth as well, by digitally "occupying" the booth. There is no difference in the occupant experience as the booth treats the digital user as if the person was physically there.

fig. 62 interactive seating scenarios

160

INTERACTIVE SEATING DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .
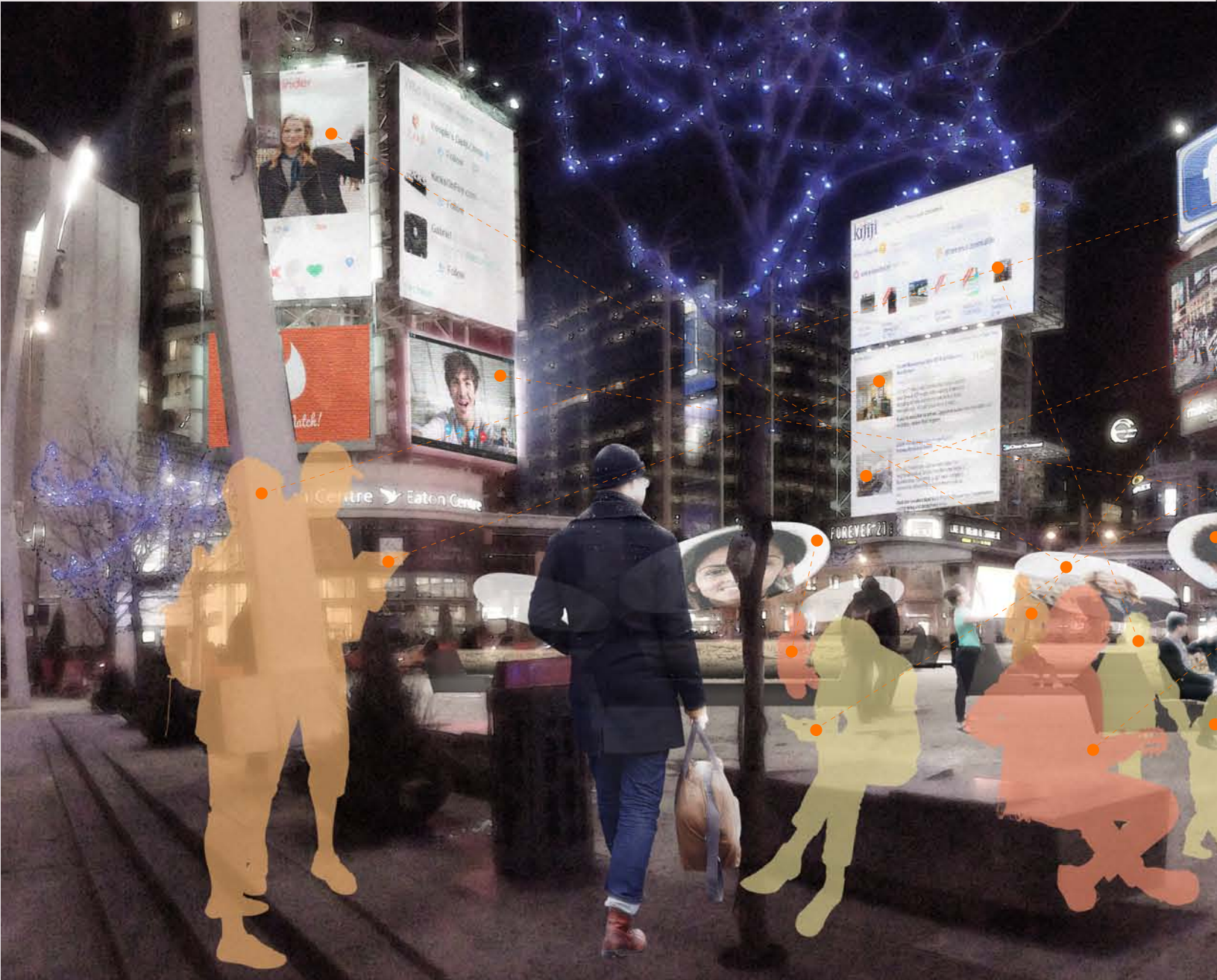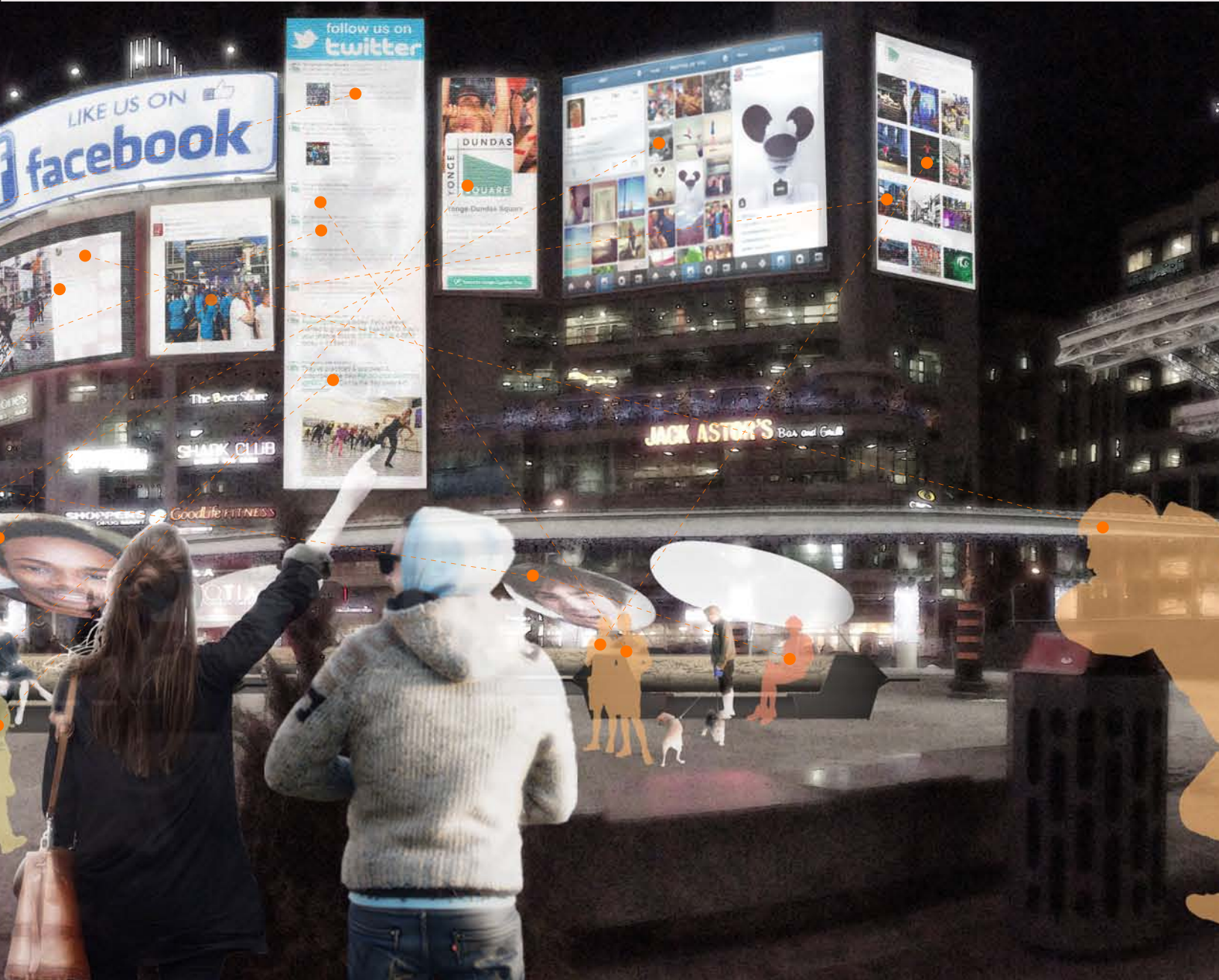
Vision for interactive seating
Interactive seating allows both digital and physical citizens of Dundas square to participate socially in the space. Being able to view and interact with one another, both occupy the space simultaneously.

Yelp

post archives (reviews and ratings)

live track of posts (time log)

types of users

user trends
(#, events, locations)

Dundas Square Yelp layers

Facebook

post archives

live track of post (time log)

types of users

user trends
(#, events, locations)

Dundas Square Facebook layers

skype

incoming call capability

outgoing call capability

group call ability
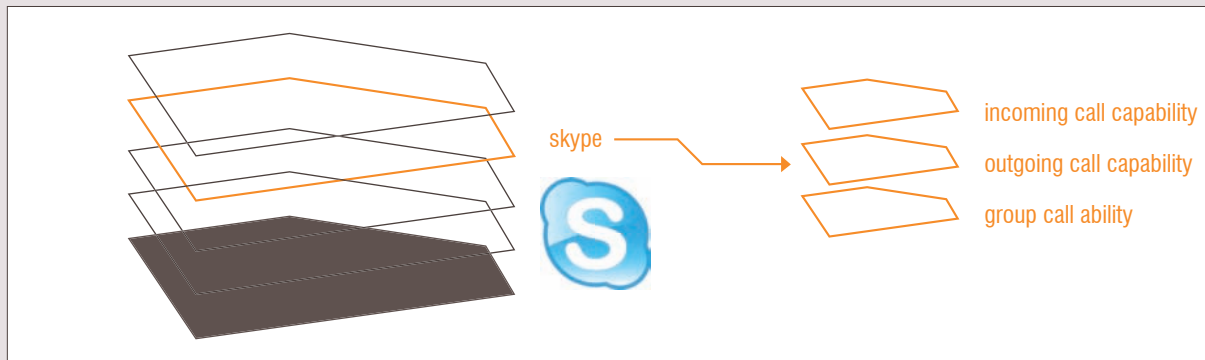
Dundas Square Skype layers

Twitter

post archives

live track of post (time log)

types of users

user trends
(#, events, locations)
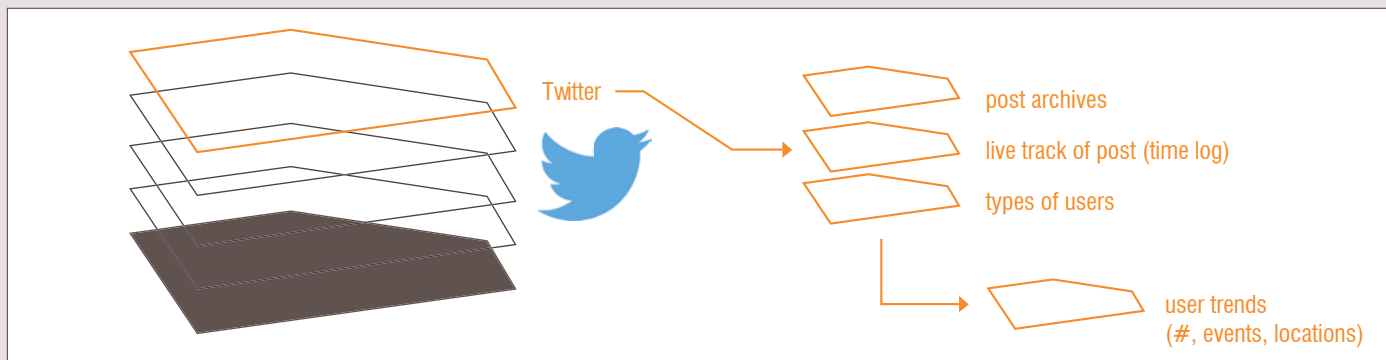
Dundas Square Twitter layers

INTERACTIVE SEATING DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

43 reviews

Extracting Yelp data allows user's account to be examined. Their reviews, places they've gone to and the ratings they provided can all be viewed.

11,192 followers
163, 301 check-ins
2, 300+ reviews

Facebook allows extraction of social digital footprint history, everything from events they've recently participated in to their education can be viewed based on their account public settings.

access to online calls

Skype is used to allow digital platform citizens to communicate with people currently sitting in the booth. Alternatively, physical participants can initiate the call to contact digital platform citizens.

9, 063 followers

Twitter allows user's more casual comments and posts to be seen, creating immediacy through live tracking of user's where-abouts and their current activities.

INTERACTIVE SEATING DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .
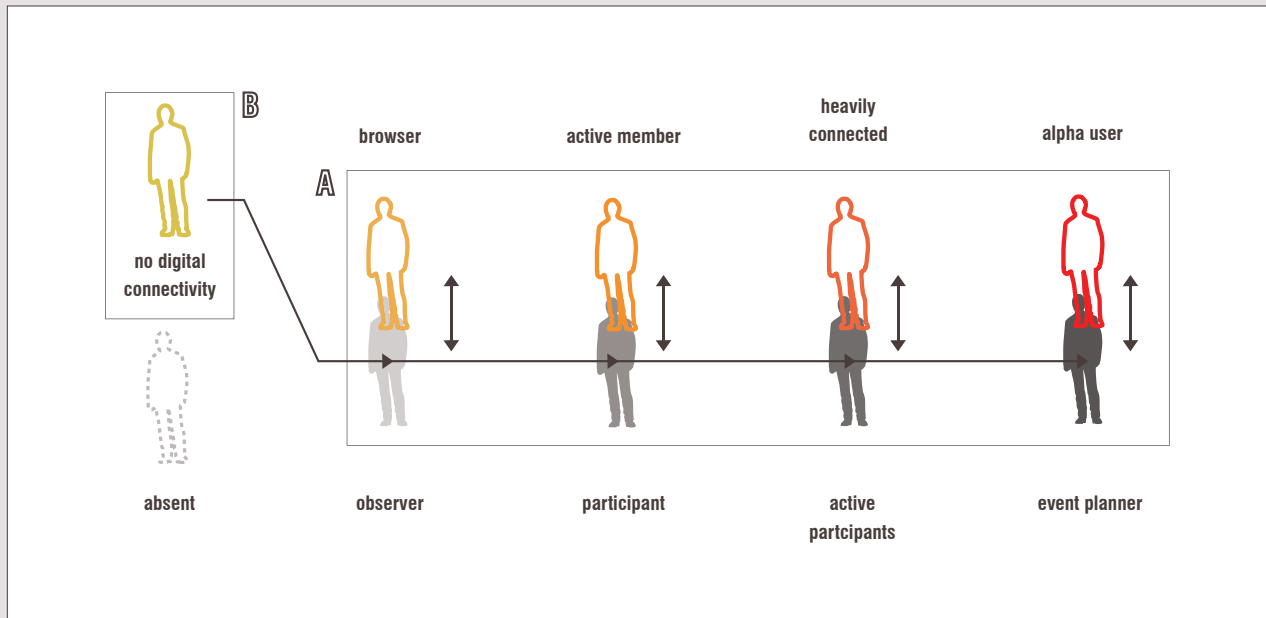
fig. 63 digital platform citizens and physical platform citizens involvement
digital platform citizens lens covered in Chapter 1

A There is a live relationship between the physical results and digital activities - as digital content begins to affect physical users. Occupants are able to engage through either digital or physical means. Depending on the nature of the participation, the participant is both a digital and physical citizen.

B Physical participants that do not have digital connectivity or any previous digital footprint are still able to engage in digital activities within Dundas Square. Although their individual identity might not exist in the digital world, their actions have a dual platform effect on Dundas Square.

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

The digitalscapes used in this design includes Twitter, Skype, Facebook and Yelp. Each layer provides different user account data - creating a clearer digital identity of the user in question.

twitter
skype
Facebook
yelp

post archives
live track of post (time log)
types of users
user trends (#, events, locations)

incoming call capability
outgoing call capability
group call ability

post archives
live track of post (time log)
types of users
user trends (#, events, locations)

post archives (reviews and ratings)
live track of posts (time log)
types of users
user trends (#, events, locations)

fig. 64 digitalscapes used for the design
digitalscapes lens covered in Chapter 3

INTERACTIVE SEATING DESIGN CHARRETTE

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE .
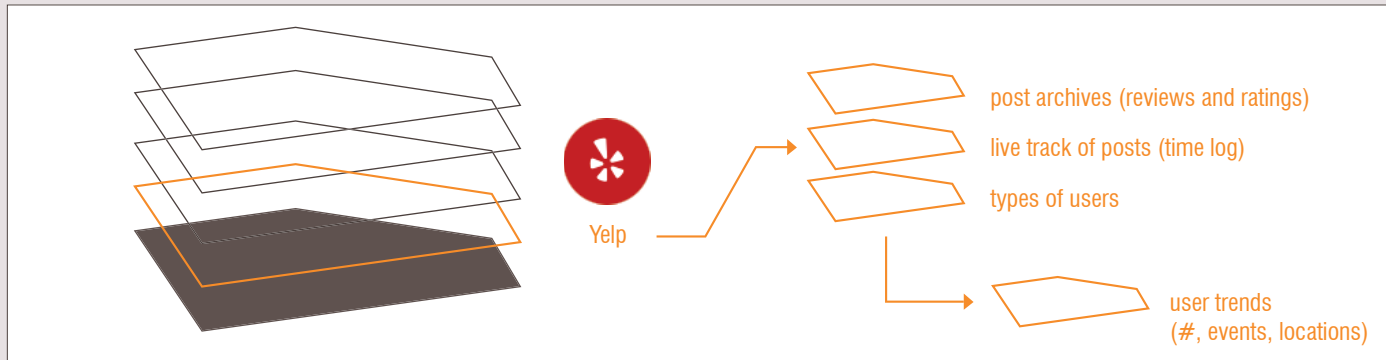DATA TRANSFER .
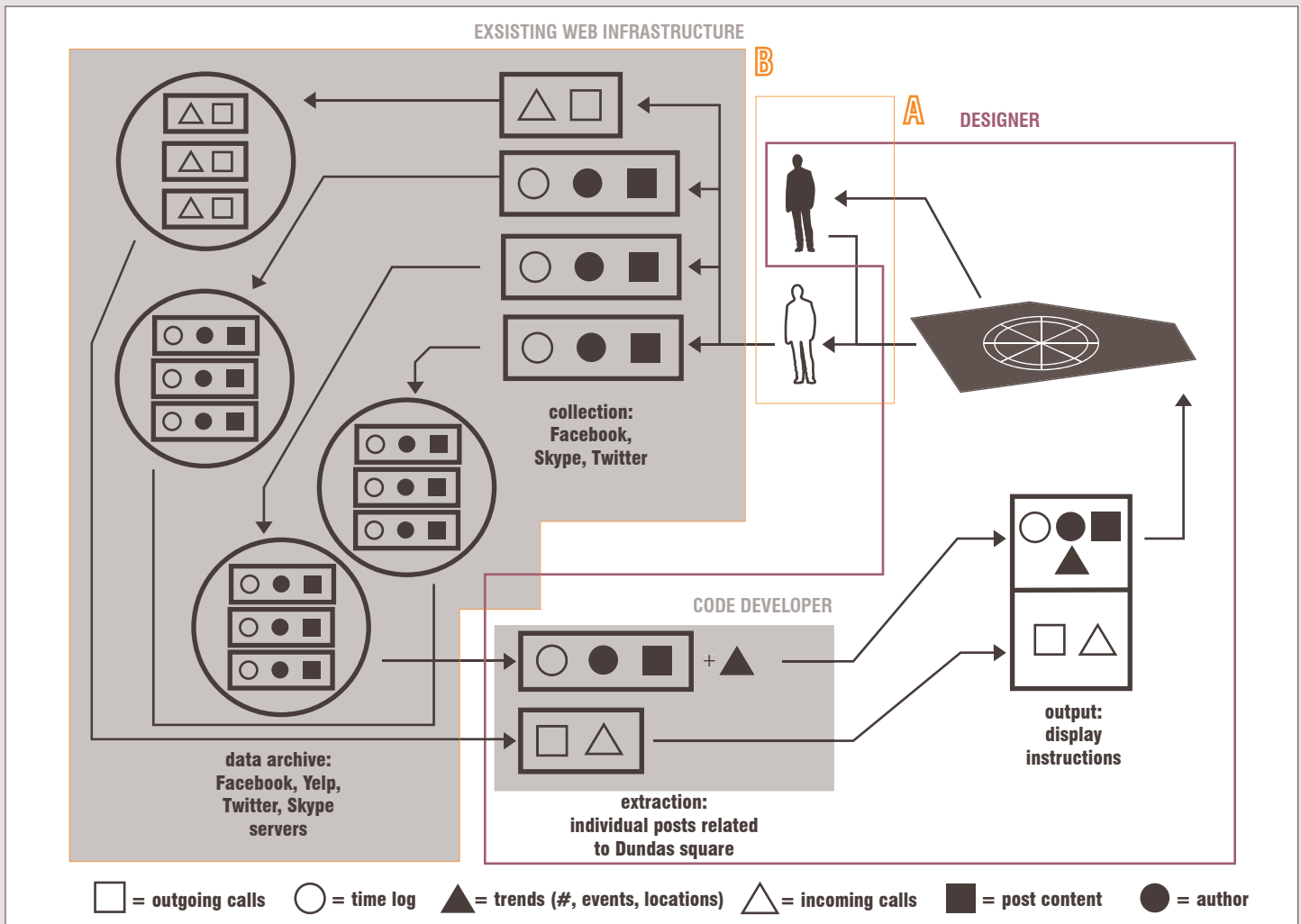
fig. 65 digestive cycles of data
digestive data cycle covered in Chapter 3

A Both physical and digital platform citizens are engaged by the interactive seating. Occupants exist in both platforms - encouraging interaction between the two.

B The data input and its collection method already exist - the servers of Yelp, Facebook, Skype and Twitter continue to store digital citizen input. The existing infrastructure is there and available, it is up to the designer to determine how it is extracted.

DESIGNER The role of the designer is to design the type of data extracted and decide how it is processed. The design should help exchange data between digital and physical platform citizens with ease. This design encourages a dual platform interaction - where footprints made by both platforms impact one another.

INTRODUCTION . DESIGN SUMMARY . DIGITAL PLATFORM CITIZENS . DIGITALSCAPES . DIGESTIVE CYCLE . DATA TRANSFER .

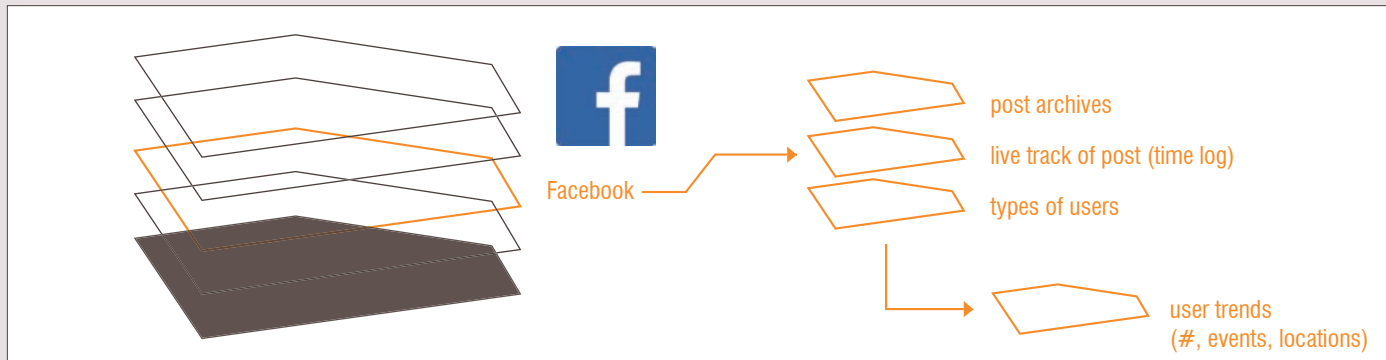The interactive seating concept allows a loop data flow transfer or dual platform activity to occur. The physical platform citizens are able to share information and activity output with digital platform citizens and vice versa - but most importantly, the encouragement of bridging the gap between the two platforms brings the realms closer together. The line is blurred as to when a citizen is more physically existent in the "space" than digitally, the desired affect is to state that the occupant is a dual platform citizen, that exists in both platforms.

the information regarding time log, author, and supporting info. is transferred to the physical realm

physical citizens are able to access digital information but not able to directly input their information

the digital content output is displayed live

the physical participants are not able to produce output on their own but are able to view and access digital output

fig. 66 digital to physical data transfer
digitalscapes lens covered in Chapter 3

DUAL PLATFORM UNDER-STANDING.

THE NARRATIVE SO FAR...

As Web 2.0 online services pushed for sophisticated technologies in digital identity creation and an architecture of participation, a new category of occupants emerged: the digital platform citizen. To further understand the behaviour of these digital platform citizens, the population can be categorized into five types of citizenships: no digital footprint, the browser, active member, heavily connected and the alpha user. Each type of citizen has its own unique characteristics as a user of digital space. As a designer, it is important to learn how to engage each of these digital platform citizens and understand what motivates them to participate and invest in their belonging platform.

With digital platform citizens, comes their passive and active footprints - the traces of data left behind as a result of their digital activities. Data becomes meaningful for contextual study when location of data is considered. Contextual data generated by the occupying digital platform citizens of the location in question become valuable layers of contextual information. As these layers thicken and combine to form greater contextual information, they become digitalscapes - digital counterparts to the traditional physical study of the built environment context.

The content creation of digitalscapes is determined by participants of the place in question. The immense quantity of data generated must be organized and facilitate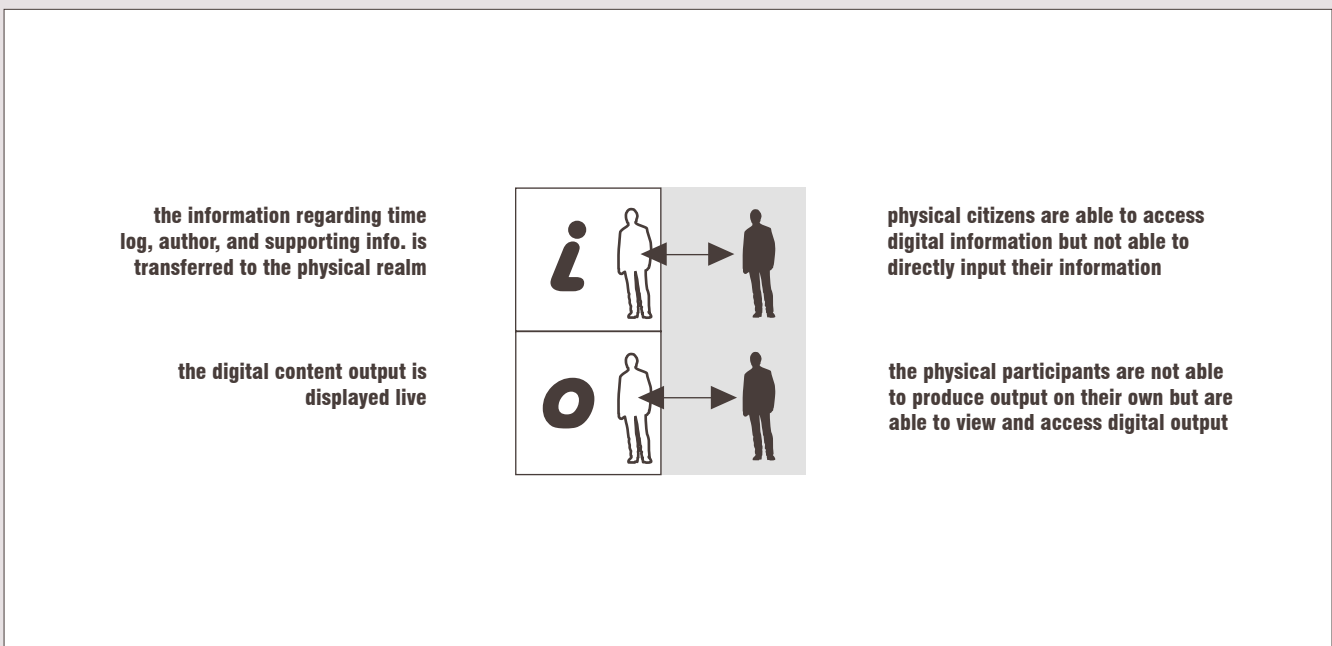d through a digestive data cycle to strategically connect with the built environment. The cycle consists of: collection, data archive, extraction and output - each supporting the transformation from digital data to physical output. A key understanding that emerges in this process is the role of the designer to determine what part of the digestive cycle they design versus utilizing existing digital platform infrastructure.

The digestive data cycle's ultimate function is to facilitate how data is transferred between physical and digital realms. There are three possible methods of data transfer: digital to physical, physical to digital and loop data flow. Each transfer methods allow different types of possibilities between digital platform citizens and physical platform citizens. When the built environment is constructed with these data transfer methods in mind, the outcome is a dual platform design that encourages dual platform enagement - a space that considers both realms of occupancy existence and determine how the two platforms synergize or take advantage of each other.

This brings us to the practice of dual platform understanding in design...

Digital platform citizen lens unlocks:
-introduce new population of occupants into space
-providing new digital traffic into physical space
-encouraging cross-pollination between platforms
-accessibility of space becomes global

Digitalscapes lens unlocks:
-allows occupant understanding to be quantified
-efficient and flexible method of population surveying
-new steam of quantifiable data for evidence based design
-architecture is able to adapt and change in relation to live data mined
-data mined can be generalized or individual specific according to design requirement

Digestive data cycle lens unlocks:
-architect is able to understand how they can manipulate the data cycle
-able to identify case specific role of the designer based on data intervention
-able to identify where in the data cycle additional expertise is required
-able to identify which skill and programming language is required to make the desired cycle

Data transfer lens unlocks:
-designer is able map how data flows within their design
-identify data transfer advantage, opportunity, and disadvantage
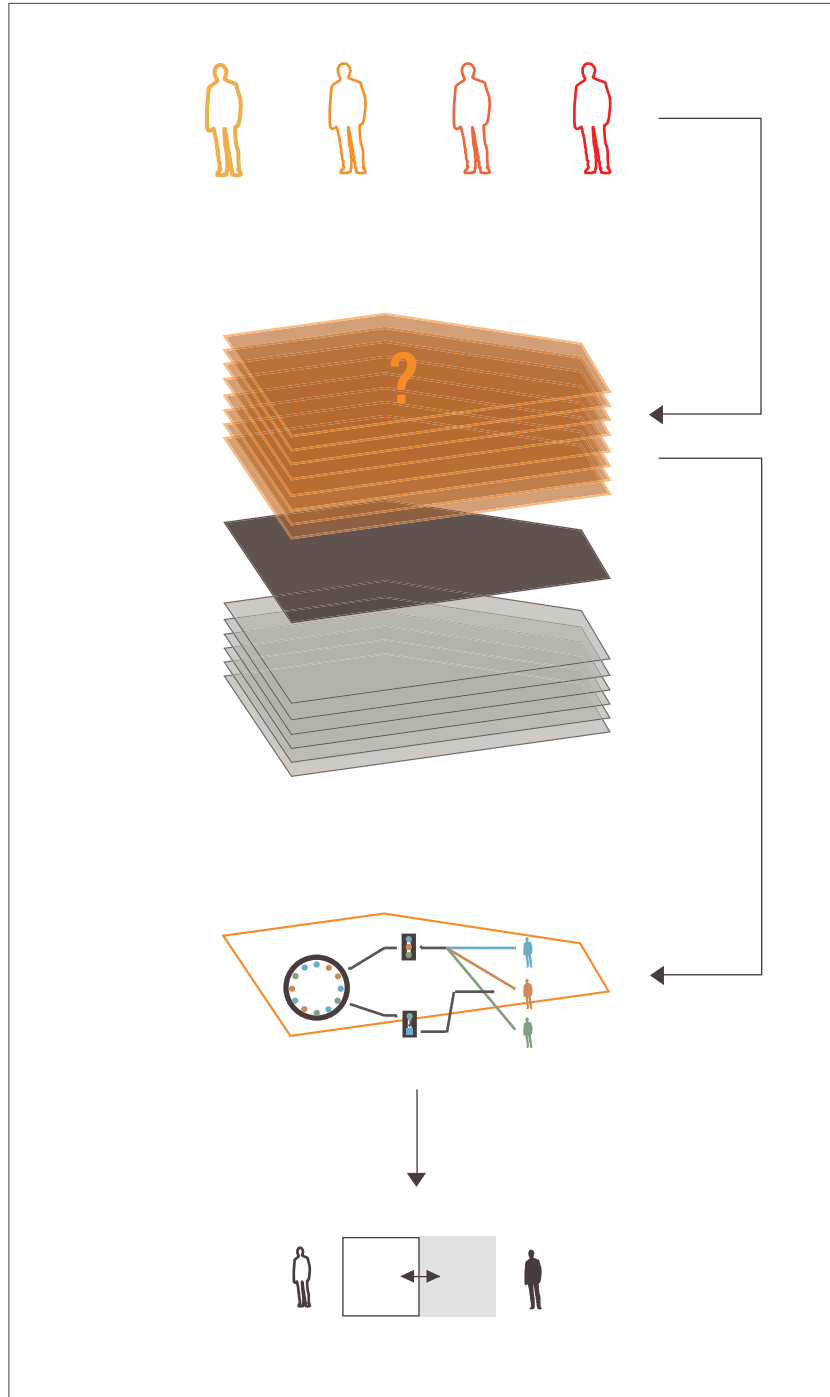-effect on each platform and occupant involved is understood as a design intent

Fig. 67 lenses for developing a dual platform understanding in environment design

DANGERS OF DUAL PLATFORM UNDERSTANDING

As a designer, dual platform understanding provides powerful tools for inclusion of digital platform occupants, integrating live stream of digital data, identifying roles within the data cycle architecture, and understanding affects of data transfer within our design intervention. But in carrying over the "mirror world" of the digital platform into the physical one, the designer must understand that this "mirror world" is not a perfect reflection of the physical one. Digital platforms exist and are driven by different motives then physical space, therefore the designer must be wary and understand how dual platform understanding might contribute to their design and not alter or even stunt the design intent. There are two major dangers of dual platform understanding I would like to highlight: inequality among digital platform citizens and private agencies involved in digital platforms. Each presents a critical issue the designer must be aware of when applying dual platform understanding in design. It is the role of the architect to take careful percussions so that these factors do not negatively impact their design or occupants involved.

Although digital platform identities are managed by real people, digital platforms identifies these individuals as quantitative values (often numeric and heavily simplified methods of valuing people) to measure their hierarchy as a citizen. This presents the first danger of dual platform understanding: the issue of inequality in digital platform citizens. There is a very transparent hierarchy within digital platforms and with it, inequality in treatment of the digital platform citizens involved. Higher level citizens might have more access, greater opportunity, or even an unfair advantage in being heard within a digital platform. Since many Web 2.0 digital platforms depend on their higher level citizens with their survival, they are given special privileges and opportunities to further their progression as a citizen of the platform. When integrating these digital platform citizens into the physical world, it is the role of the designer to understand these inequalities and not allow it to jeopardize the definition of the public realm established. It is important for the designer to acknowledge that the platform establishes certain inequalities for their survival, but not allow it to impede with their design intent or usage of the space. It is in this very act of specifying how the different demographic of digital platform citizens use or interact with the space that differentiate good design from bad in dual platform understanding.

The creation of popular digital platforms often does not emerge from public funding or public interest, there are private agencies that are involved with their own agenda for the creation of these digital platforms. This presents the second danger of dual platform understanding: private agency involvement in digital platforms. Although it is important to piggyback on already popular digital platforms for citizen and data volume, the designer must be wary of the different private agencies involved within a digital platform. Popular digital platforms such as: YouTube or Facebook may first appear to offer a public service, but they have a financial agenda in the creation and growth of their digital platforms. These private interests determine data observation, ownership, and distribution within the digital platform. When designing with these platforms, it is important to understand these private interests - to protect the occupants that the designer is responsible for. I believe for now, it is a necessity for digital platforms to be financially driven by private agencies - as it helps these platforms advance in popularity and in utility. I believe it is the role of the designer to understand how the data used from these platforms are managed and stored for corporate interests to not harm the occupants of their design.

Dual platform understanding allows powerful tools for enhancing occupant interaction and involvement, but introducing digital platforms into the physical world must be done with a designer's touch: a careful study of the platform's architecture and intentional maneuver in combining the two platforms to create good design. There are critical differences between the digital and the physical platforms, the action of dual platform understanding in design should be done with an awareness of these differences and take advantage of its synergies.

DUAL PLATFORM UNDERSTANDING IN DESIGN

Dual platform understanding in designing of built environments should not be seen as a style or a type of architectural expression. Instead, dual platform understanding should be seen as a common practice or necessary foresight into designing built environments. Digital platforms and its citizens cannot be seen as optional occupancy that designers choose to include in their design - but receive equal priority as physical occupants do when designing built environments. As demonstrated in previous chapters, digital platform citizens have the power to influence or to be influenced by a place just as much as physical occupants. If so, why should they be excluded in the process of design? They exist and contribute in the digital representation of built environment - providing valuable data that make up the digitalscapes of the place. I believe it is the responsibility of future designers to understand that digital platform citizens exist and design accordingly, to not only incorporate the population into the physical realm, but to realize their potential as contributing occupants of place.

Once dual platform understanding becomes a common practice in designing built environments, its integration methods and relationships between digital and physical realms become powerful tools to create different responsive environments. Using the content generated in one platform to encourage activity in the other, a dual platform understanding provides ample opportunities to enhance both the digital and physical experiences of place. It is important to view the role of the designer in this scenario as a facilitator more than an inventor of dual platforms at work. Digital and physical platforms individually exist and it's up to the designer to determine how the one or both enhance the spacial experience of the other. It is the strength of the designer's skill in engaging an already existing digital or physical platforms in their design that often create the most successful built environments.

Looking back into case studies, Wikipedia's 10th anniversary installation exemplifies an excellent execution in tapping into the existing digital platform to enhance the physical spatial experience. Digital platform citizens of Wikipedia are extremely active users - constantly creating or editing new content within the website. As of yet, Wikipedia has a total of 37 million articles, and receive, on average, 10 edits per second by its digital

platform citizens.[1] Its designers took advantage of this extremely active community behaviour and brought the global effort in creating content for Wikipedia into the physical world. The efforts of digital platform citizens suddenly had tangible physical existences - having the edited content printed to properly translate digital data into physically readable objects. To put it another way, the designers were able to populate the physical environment with digital content of the Wikipedia website. This in turn caused physical occupants to witness digital activities in the physical platform, either inspiring them to contribute to the digital activity themselves or physically browse through digital data being printed. There is no extra effort from its designers to create or manage the digital platform of Wikipedia, the designers are simply using the well-used digital infrastructure of Wikipedia and its citizens to enhance the physical environment.
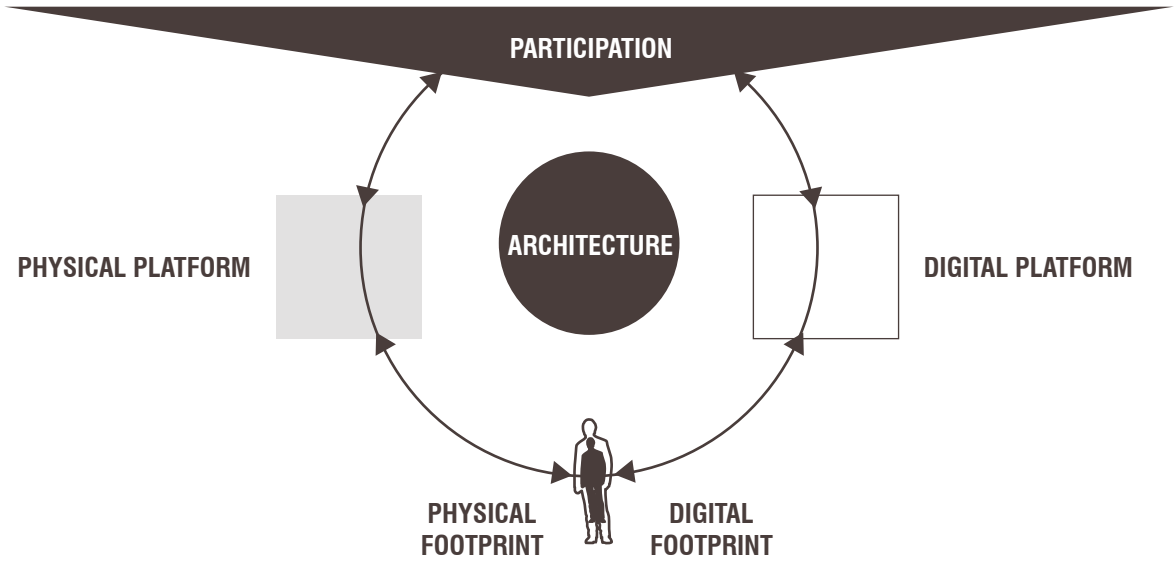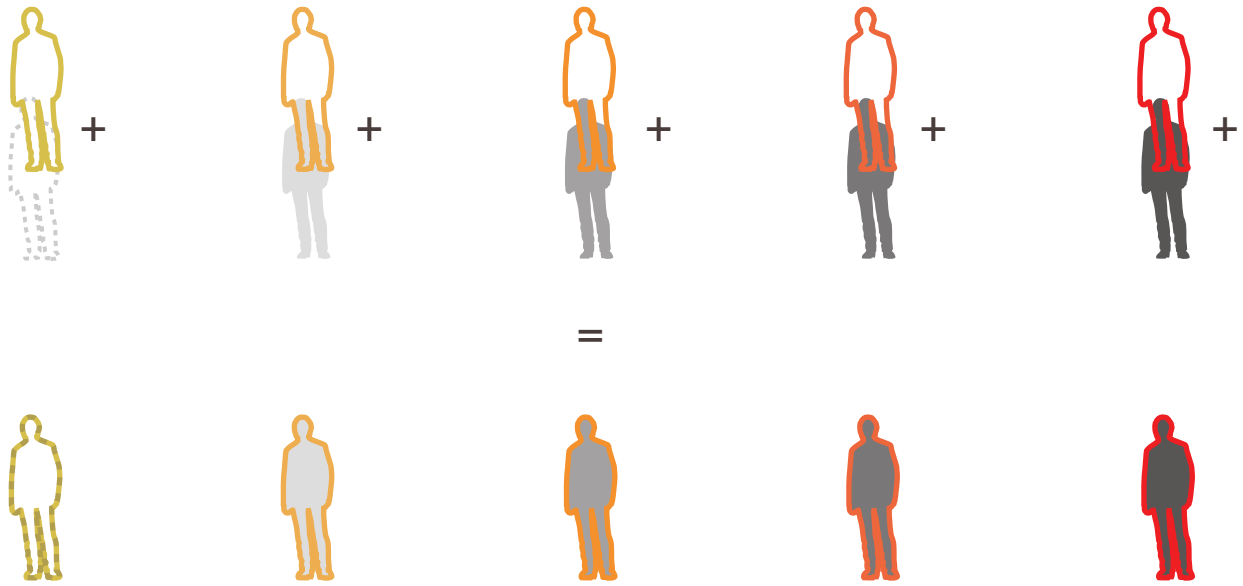
Dual platform understanding in designing built environments is not always about utilizing digitalscapes to enhance the physical environment. The effect can also be reversed, using active physical platform content and its citizens to enhance the experience of its digital platform counterpart. This design method is exemplified in the previously covered design study of "Interactive Seating" in Dundas Square. The design intent is not to simply bring in digital activities into the physical realm, but to allow dual platform existence of its occupants. This dual existence means that citizens can no longer be distinguished as digital or physical occupants as their actions or footprints simultaneously exist and impact both platforms. To support this, the interactive seating detailed elements are designed to create a seamless data transfer between physical and digital platforms so that there is no loss or gain in being a digital or physical platform citizen of Dundas Square. There is a mutual dual platform benefit in the activities individuals engage in as occupants. This is a creation of the dual platform citizen, a design that seamlessly connects digital and physical experiences to have its occupants exist both in digital and physical realms simultaneously.

So far, I've identified two methods of utilizing dual platform understanding in designing of built environments: the one way enhancement of platform relationship and the dual platform citizen arrangement. I cannot say one is greater than

---

1 Wikipedia. "Wikimedia projects counter". accessed November 5, 2015. https://tools.wmflabs.org/wmcounter/.

the other, as each method understands and incorporates dual platform thinking - just facilitating it differently to satisfy different design requirements. Therefore, what my thesis identifies are not the preferred methods of data transfer, but a call for design to become adaptors for facilitating dual platforms. It is the role of the designer to strategize the behaviour of the adaptor and the way it translates data between two platforms. Such design practice requires understanding of digital and physical platform citizens that occupy the space, digitalscapes available and appropriate for the design, digestive data cycles created and the different methods of data transfer between platforms.

My thesis research is a call for action, for future architects to understand design as a dual platform practice. I believe the practice of dual platform understanding should not be considered a style or trend in architecture, but an integral process in understanding context and its occupants. Designers of built environments today must begin to identify and capture the untapped potential of emerging digital platform citizens and the valuable content they generate. It is the responsibility of architects to not neglect the future definition of what it means to occupy a space, but to embrace the duality in which the world exists today - building environments that are empathic to this change.

PARTICIPATION

PHYSICAL PLATFORM

ARCHITECTURE

DIGITAL PLATFORM

PHYSICAL
FOOTPRINT

DIGITAL
FOOTPRINT

Aaron Charles. "How Does YouTube Prioritize Its Results?". Chron. accessed November 10, 2015. http://smallbusiness.chron.com/youtube-prioritize-its-results-72446.html

Christian Dimmer. "Urban Spaces in Japan: Cultural and Social Perspectives". London: Routledge, 2012.

Corey Rudl. "10 No-Cost ways to Generate Site Traffic". Entrepreneur, November 4, 2004. accessed October 10, 2015. https://www.entrepreneur.com/article/73452

Christian Dimmer. "Urban Spaces in Japan: Cultural and Social Perspectives". London: Routledge, 2012.

Daniel Bayer. "Designing Public: Behavior in Public Spaces". Basel: Birkhauser, 2008.

Danny Dover, "Reddit algorithm". SEOMOZ, July 2, 2008. accessed December 2, 2015.https://moz.com/blog/reddit-stumbleupon-delicious-and-hacker-news-algorithms-exposed

David Gelernter. "Mirror Worlds: or the Day Software Puts the Universe in a Shoebox...How It Will Happen and What It Will Mean" Oxford: Oxford University Press, 1992.

Dell Christopher, "REPLAY CITY : Improvisation als urbane Praxis". Berlin: Jovis Verlag GmbH, 2011.

Garett Sloane. "YouTube May be Worth Up to $40 Billion-More Than Twitter". ADWEEK, September 3, 2014. accessed November 10, 2015. http://www.adweek.com/news/technology/youtube-may-be-worth-40-billion-more-twitter-159861

Ganesh Iyer, David Soberman, J. Miguel Villas-Boas. "The Targeting of Advertising". in *Marketing Science*, Vol. 23, No. 3, 2005, pp 461-476. Meryland: INFORMS, 2005.

"Google closes $A2b YouTube deal". The Age, November 14, 2006. accessed November 2, 2015. http://www.theage.com.au/

Henri Lefebrre. "Production of Space". New Jersey: Wiley-Blackwell Publishing, 1991.

H. Lyn Lofland. "The Public Realm: Exploring the City's Quintessential Social Territory". New Jersey: Transaction Publishers, 1998.

John Cloud. "The YouTube Gurus". Time.com, December 26, 2006, accessed November 10, 2015. http://content.time.com/time/magazine/article/0,9171,1570795,00.html

J. Miguel Villas-Boas, "Dynamic competition with Customer Recognition". in *the RAND Journal of Economics*, Vol. 30, No.4, 1999, pp 604-631. accessed February 10, 2015. http://ssrn.com/abstract=182384

Kieron O'Hara, Mischa M. Tuffield, Nigel Shadbolt. "Lifelogging: Privacy and empowerment with memories for life". in *Identity in the Information Society,* 2008, Volume 1, Issue 1, pp 155-172. accessed March 17, 2014. DOI: 10.1007/s12394-009-0008-4

Marina del Rey. "DARPA Internet Program Protocol Specification". in *Internet Protocol*, 1981. California: USC Information Sciences Institute, 1981.

Mary Madden, Susannah Fox, Aaron Smith, Jessica Vitak. "Digital Footprints". Pew Research Center, 2007, accessed October 20, 2015.

Paul Gallagher. "Meet Felix Kjellberg – the new 'King of the Web'". The Independent, November 14, 2013. accessed October 5, 2015. http://www.independent.co.uk/life-style/gadgets-and-tech/features/meet-felix-kjellberg-the-new-king-of-the-web-8947100.html

reddit. "about" accessed November 3, 2015. https://about.reddit.com/

reddit. "values" accessed November 3, 2015. from https://www.reddit.com.

Tim O'Reilly. "What is Web 2.0". O'Reilly Network. last modified September 30, 2005, http://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html

T. Aichner, F. Jacob. "Measuring the Degree of Corporate Social Media Use". in *International Journal of Market Research*, Vol. 57, No. 2, 2015, pp257-275. accessed October 20, 2015. DOI: 10.2501/IJMR-2015-018

Viktor, Mayer-Schonberger, Kenneth Cukier. " Big Data: A Revolution that Will Transform how We Live, Work, and Think". Massachusetts: Houghton Mifflin Harcourt, 2013.

Wikipedia. "Wikimedia projects counter". accessed November 5, 2015. https://tools.wmflabs.org/wmcounter/.