Title: Streams of Content, Limited Attention:
Teaser/Sub: The Flow of Information through Social Media

<h4>LIVING IN STREAMS</h4>

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In his seminal pop-book, Mihaly Csikszentmihalyi argued that people are happiest when they can reach a state of "flow." He talks about performers and athletes who are in the height of their profession, the experience they feel as time passes by and everything just clicks. People reach a state where attention appears focused and, simultaneously, not in need of focus at the same time. The world is aligned and everything just feels right.

Consider what it means to be "in flow" in an information landscape defined by networked media, and you will see where Web 2.0 is taking us. The goal is not to be a passive consumer of information or to simply tune in when the time is right, but rather to live in a world where information is everywhere. To be peripherally aware of information as it flows by, grabbing it at the right moment when it is most relevant, valuable, entertaining, or insightful. Living with, in, and around information. Most of that information is social information, but some of it is entertainment information or news information or productive information. Being in flow with information is different than Csikszentmihalyi's sense, as it's not about perfect attention, but it is about a sense of alignment, of being aligned with information.

As of late, we've been talking a lot about content streams, streams of information. This metaphor is powerful. The idea is that you're living inside the stream: adding to it, consuming it, redirecting it. The stream metaphor is about reaching flow. It's also about restructuring the ways in which information flows in modern society.

Those who are most enamored with services like Twitter talk passionately about feeling as though they are living and breathing with the world around them, peripherally aware and in-tune, adding content to the stream and grabbing it when appropriate. This state is delicate, plagued by information overload and weighed down by frustrating tools.

For the longest time, we have focused on sites of information as a destination, of accessing information as a process, of producing information as a task. What happens when all of this changes? While things are certainly clunky at best, this is the promise land of the technologies we're creating. This is all happening because of how our information society is changing. But before we talk more about flow, we need to step back and talks about shifts in the media landscape.

<h4>FROM BROADCAST TO NETWORKED</h4>

For the last few centuries, we have been living in an era of broadcast media, but we have been switching to an era of networked media. This fundamentally alters the structure by which information flows.

Those who believe in broadcast structures recognize the efficiency of a single, centralized source. There's some nostalgia here. The image is clear: 1950s nightly news, everyone tuning in to receive the same

message at the same time. There are the newspapers, the radio stations, the magazines—all telling the same news-y story. Centralized sources of information are powerful because they control the means of distribution. There is also the town gossip, the church, and the pub. These too were centralized channels for disseminating information.

Broadcast media structures take one critical thing for granted: attention. There is an assumption that everyone will tune in and give their attention to the broadcast entity, even though that was never true in the first place. As TV channels and publishing brands proliferated, we've seen that attention can easily be fragmented. Over the last few decades, increasing numbers of entities have been fighting for a smaller and smaller portion of the pie. Even gossip rags started competing for attention.

The opportunities for media creation have been rising for decades, but the Internet provided new mechanisms through which people could make their own content available. From blogging to social network sites to media sharing sites to sites that provide social streams, we are seeing countless ways in which a motivated individual can make their personal content available. There were always folks willing to share their story but the Internet gave them a pulpit on which to stand.

Internet technologies are fundamentally dismantling and reworking the structures of distribution. Distribution is a process by which content creators find channels through which they can disseminate their creation. In effect, they're pushing out the content. Sure, people have to be there to receive it, but the idea is that there are limited channels for distribution and thus getting access to this limited resource is hard. That is no longer the case.

As networked technologies proliferate around the world, we can assume that there is a channel of distribution available to everyone and between everyone. In theory, anyone could get content to anyone else. With the barriers to distribution collapsing, what matters is not the act of distribution, but the act of consumption. Thus, the power is no longer in the hands of those who control the channels of distribution, but those who control the limited resource of attention. This is precisely why YOU were Time Magazine's the Person of the Year in 2006. Your attention is precious and valuable. It's no longer about push; it's about pull. And the "Law of Two Feet" is now culturally pervasive.

While we're dismantling traditional structures of distribution, we're also building out new forms of information dissemination. Content is no longer being hocked, but links are. People throughout the network are using the attention they receive to traffic in pointers to other content, serving as content mediators. Numerous people have become experts as information networkers.

To many people, this seems like old news. Isn't that the whole point of Web 2.0? Isn't that what we've been living? Sure, of course. But now that we're seeing Web 2.0 go mainstream, we're seeing all sorts of folks get into the game. What they're doing often looks different than what early adopters were doing. And the business folks are all trying to turn the Internet into a new broadcast channel (don't worry, they're failing). But we need to talk about these shifts so we can talk about what innovation needs to happen.

If folks are going to try to get in-flow with information, we need to understand how information flows differently today. Let me highlight four challenges, points where technological hope and reality collide.

<h4>FOUR CORE ISSUES</h4>

1) Democratization. Switching from a model of distribution to a model of attention is disruptive, but it is not inherently democratizing. This is a mistake we often make when talking about this shift. We may be democratizing certain types of access, but we're not democratizing attention. Just because we're moving towards a state where anyone has the ability to get information into the stream does not mean that attention will be divided equally. Opening up access to the structures of distribution is not democratizing when distribution is no longer the organizing function.

Some people might immediately think, "Ah, but it's a meritocracy. People will give their attention to what is best!" This too is mistaken logic. What people give their attention to depends on a whole set of factors that have nothing to do with what's best. At the most basic level, consider the role of language. People will pay attention to content that is in their language, even if they can get access to content in any language. This means Chinese language content will soon get more attention than English content, let alone Dutch or Hebrew content.

2) Stimulation. People consume content that stimulates their mind and senses. That which angers, excites, energizes, entertains, or otherwise creates an emotional response. This is not always the "best" or most informative content, but that which triggers a reaction.

This isn't inherently a good thing. Consider the food equivalent. Our bodies are programmed to consume fat and sugars because they're rare in nature. Thus, when they come around, we should grab them. In the same way, we're biologically programmed to be attentive to things that stimulate: content that is gross, violent, or sexual and that gossip which is humiliating, embarrassing, or offensive. If we're not careful, we're going to develop the psychological equivalent of obesity. We'll find ourselves consuming content that is least beneficial for ourselves or society as a whole.

We are addicted to gossip for a reason. We want to know what's happening because such information brings us closer to people. When we know something about someone, there's a sense of connection. But the information ecology we live in today has twisted this whole thing upside down. Just because I can follow the details of Angelina Jolie's life doesn't mean she knows I exist. This is what scholars talk about as parasocial relations. With Facebook, you can turn your closest friends into celebrities, characters you gawk at and obsess over without actually gaining the benefits of social intimacy and bonding.

Stimulation creates cognitive connections. But it is possible for there to be too much stimulation. We don't want a disconnected, numb society, nor a society of unequal social connections. So driving towards greater and more intense stimulation may not be what we want.

Of course, there's money here and people will try to manipulate this dynamic for their own purposes. There are folks who put out highly stimulating content or spread gossip to get attention. And often they succeed, creating a pretty unhealthy cycle. So we have to start asking ourselves what balance looks like and how we can move towards an environment where there are incentives for consuming healthy content that benefit individuals and society as a whole. Or, at the very least, how not to feed the trolls.

3) Homophily. In a networked world, people connect to people like themselves. What flows across the network flows through edges of similarity. The ability to connect to others like us allows us to flow information across space and time in impressively new ways, but there's also a downside.

Prejudice, intolerance, bigotry, and power are all baked into our networks. In a world of networked media, it's easy to not get access to views from people who think from a different perspective. Information can and does flow in ways that create and reinforce social divides. Democratic philosophy depends on shared informational structures, but the combination of self-segmentation and networked information flow means that we lose the common rhetorical ground through which we can converse.

Throughout my studies of social media, I have been astonished by the people who think that XYZ site is for people like them. I interviewed gay men who thought Friendster was a gay dating site because all they saw were other gay men. I interviewed teens who believed that everyone on MySpace was Christian because all of the profiles they saw contained biblical quotes. We all live in our own worlds with people who share our values and, with networked media, it's often hard to see beyond that.

Ironically, the one place where I'm finding people are being forced to think outside their box is the Trending Topics on Twitter. Consider a topic that trended a while ago: #thingsdarkiessay. Started in South Africa, this topic is fundamentally about language and cultural diversity but, when read in a U.S.-context, it reads as fundamentally racist. Boy did this blow up, forcing a lot of folks to think about language and cultural differences. Why? Because Trending Topics brings a topic that gained traction in a segment of the network to broader awareness, often out of context. Unfortunately, it's hard to get meaningful dialogue going once a Trending Topic triggers reactions.

In an era of networked media, we need to recognize that networks are homophilous and operate accordingly. Technology does not inherently disintegrate social divisions. In fact, more often then not, in reinforces them. Only a small percentage of people are inclined to seek out opinions and ideas from cultures other than their own. These people are and should be highly valued in society, but just because people can be what Ethan Zuckerman calls "xenophiles" doesn't mean they will be.

4) Power. When we think about centralized sources of information distribution, it's easy to understand that power is at stake. But networked structures of consumption are also configured by power and we cannot forget that or assume that access alone is power. Power is about being able to command attention, influence others' attention, and otherwise traffic in information. We give power to people when we give them our attention and people gain power when they bridge between different worlds and determine what information can and will flow across the network.

In a networked culture, there is also power in being the person spreading the content. When my colleagues and I were examining retweets in Twitter, we saw something fascinating: a tension between citationality and attribution. In short, should you give credit to the author of the content or acknowledge the person through whom you learned of the information? Instinctually, many might believe that the author is the most important person to credit. But, few ideas are truly the product of just one individual. So why not credit the messenger who is helping the content flow? We found that reasonable people disagreed about what was best.

In a broadcast model, those who control the distribution channels often profit more than the creators. Think: Clear Channel, record labels, TV producers, etc. Unfortunately, there's an assumption that if we get rid of limitations to the means of distribution, the power will revert to the creators. This is not what's happening. Distribution today is making people aware that they can come and get something, but those who get access to people's attention are still a small, privileged few.

Instead, what we're seeing a new type of information broker emerge. These folks get credit for their structural position. While the monetary benefits are indirect, countless consulting gigs have arisen for

folks based on their power as information brokers. The old controllers of information are losing their stature (and are not happy about it). What's emerging is not inherently the power of the creators, but the power of the modern-day information brokers.

<h4>MAKING IT WORK</h4>

As our information ecosystem evolves, we will see some radical changes take place. First, I believe that information spaces will get more niche. We will see evidence of this in the ways people direct their attention, and also in what new enterprises are succeeding. Successful businesses will not be everything to everyone; that's the broadcast mentality. Instead, they will play a meaningful role to a cohort of committed consumers who give their attention to them because of their relevance.

To be relevant today requires understanding context, popularity, and reputation. In the broadcast era, we assumed the disseminator organized information because they were a destination. In a networked era, there will be no destination, but rather a network of content and people. We cannot assume that content will be organized around topics or that people will want to consume content organized as such. We're already seeing this in streams-based media consumption. When consuming information through social media tools, people consume social gossip alongside productive content, news alongside status updates. Right now, it's one big mess. But the key is not going to be to create distinct destinations organized around topics, but to find ways in which content can be surfaced in context, regardless of where it resides.

Making content work in a networked era is going to be about living in the streams, consuming and producing alongside "customers." Consuming to understand, producing to be relevant. Content creators are not going to get to dictate the cultural norms just because they can make their content available; they are still accountable to those who are trafficking content.

We need technological innovations. For example, tools that allow people to more easily contextualize relevant content regardless of where they are and what they are doing and tools that allow people to slice and dice content so as to not reach information overload. This is not simply about aggregating or curating content to create personalized destination sites. Frankly, I don't think this will work. Instead, the tools that consumers need are those that allow them to get into flow, that allow them to live inside information structures wherever they are, whatever they're doing. The tools that allow them to easily grab what they need and stay peripherally aware without feeling overwhelmed.

Finally, we need to rethink our business plans. I doubt this cultural shift will be paid for by better advertising models. Advertising is based on capturing attention, typically by interrupting the broadcast message or by being inserted into the content itself. Trying to reach information flow is not about being interrupted. Advertising does work when it's part of the flow itself. Ads are great when they provide a desirable answer to a search query or when they appear at the moment of purchase. But when the information being shared is social in nature, advertising is fundamentally a disruption.

Figuring out how to monetize sociality is a problem, and not one that's new to the Internet. Think about how we monetize sociality in physical spaces. Typically, it involves second-order consumption of calories. Venues provide a space for social interaction to occur and we are expected to consume to pay rent. Restaurants, bars, cafes… they all survive on this model. But we have yet to find the digital equivalent of alcohol.

As we continue to move from a broadcast model of information to a networked one, we will continue to see reworking of the information landscape. Some of what is unfolding is exciting, some is terrifying. The key is not be all utopian or dystopian about it, but to recognize what changes and what stays the same. The future of Web 2.0 is about information flow and if you want to help people, help them reach that state.

This article is based on a talk I gave at O'Reilly's Web 2.0 Expo last November. This could not have been written if it weren't for an inspiring conversation with Dan Gillmor.