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ENTERPRISING PLACES

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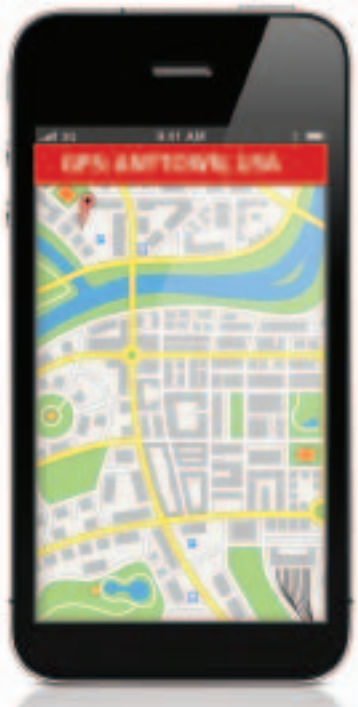

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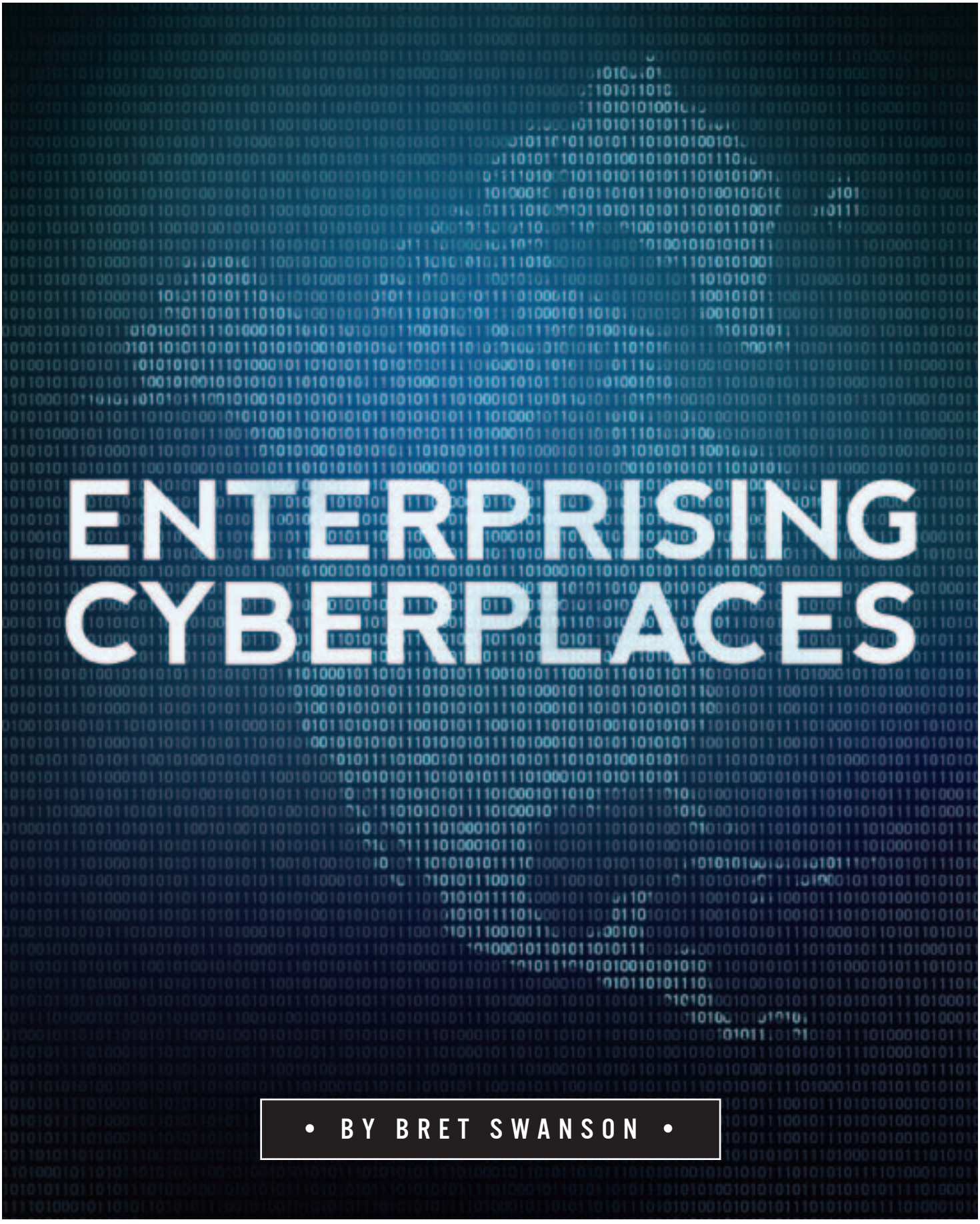

ENTERPRISING CYBERPLACES

• BY BRET SWANSON •

Bustling Britain during the Industrial Revolution. Mid-century Detroit during the automobile boom. These were the enterprising places of the past. Today, we think of technology clusters like Silicon Valley or the mammoth manufacturing supply-chain of Guangdong province in the south of China.

In his book, *The Triumph of Cities*, Harvard economist Edward Glaeser showed how concentrations of people lower transaction costs, expand markets, increase specialization and promote cross-fertilization of ideas. The modern city thus became the template of the "enterprising place," an arena where diverse people, resources, talents, and ideas combine to produce new products and services, new value and wealth.

As a platform for innovation and entrepreneurship, the early city accelerated modern economic, technological and cultural development. The city was both a new communication system and a hub of commerce, using physical proximity to speed the transfer and lower the costs of information and trade. It allowed for more links between more people — furthering commerce, increasing efficiency, boosting creativity, and encouraging the survival of innovations and best-practices, much as Glaeser found.

Another arena, however, embodies many of the city's key traits tenfold. Call it what you will — the Internet, the digital world, cyberspace. It is perhaps America's most enterprising place. Today, the Internet virtually accomplishes many of the functions found in cities, only faster, with more interoperability, greater scale, less friction, and — so far — without the corrosive machine politics that in too many cities abandoned enterprise for entitlement.

The United States alone boasts more than 325 million mobile phones and 80 million residential broadband links. America generates more data traffic per capita than any nation, save tiny South Korea. Furthermore, much of the hardware, software and content innovation is happening here in the United States.

The speed of the information economy is a direct result of the astounding efficiency of our digital technologies. Because of their supreme regularity in transferring information, silicon chips, optical glass and electromagnetic wireless waves unleash endless possibilities for unpredictable creativity. General purpose platforms yield specific, surprising innovations.

When the iPhone arrived in 2007, the notion of the mobile "app" barely existed. Not five years later, Apple itself says that more than 500,000 iOS apps available at its online store, and iPhone and iPad users have downloaded more than 25 billion of them. Google's mobile operating environment, Android, is younger than iOS but runs on more devices and boasts nearly as many app options (more than 470,000, according to AppBrain).

Mobile computers and the conceptualization of the "app store" thus created a whole new software industry, now employing hundreds of thousands of people. Moreover, the new app platforms themselves were only

possible because of a larger platform — the mobile broadband Internet.

The general-purpose nature of our broadband platform expands markets, but it also expands opportunities for entrepreneurs of all shapes and sizes, regardless of age, place, or station. As Jessica E. Vascellaro reported in the June 18, 2012, edition of *The Wall Street Journal*:

> Paul Dunahoo went on a business trip to San Francisco last week, where he attended technical sessions at Apple Inc.'s developer conference, networked with other programmers and received feedback from Apple engineers on his six productivity apps.
>
> Then, Mr. Dunahoo, chief executive of Bread and Butter Software LLC, returned to Connecticut to get ready for the eighth grade.
>
> "It's a very rare opportunity" to be at Apple's conference, said Mr. Dunahoo, who is 13 years old and wears red braces.
>
> Mr. Dunahoo is one of a growing number of teens joining the app-making frenzy. Apple, the app industry's ringleader, is encouraging the trend.

The ability to quickly search for and instantaneously deliver new software to our mobile devices is a central feature in this new ecosystem. So is an app's ability to call upon resources in the cloud — like interactive maps, sports scores, financial information, social network updates, and, of course, photo sharing.

Instagram photos consume huge amounts of bandwidth (network capacity), and increasingly sophisticated apps will need ever-more capacious and robust wireless connections to realize their full power. At the top of the long list will be interactive speech-activated apps, based on Apple's Siri, for instance, or AT&T's new Watson speech API.

Where cities and the institutions within them were built over decades and centuries, communities and businesses on the Web form overnight, if not almost instantaneously. Sal Khan built the Khan Academy, a one-man global online school with more than 3,200 academic lessons, in just a few short years.

On Twitter, Facebook, and a million other "places," we are creating a new culture and commerce. It is not always pretty, but neither was every facet of life in burgeoning cities. On the Web, people can quickly develop tools to filter the "air and water," suppress "noise," and monitor the "traffic" situation. No, the Net isn't perfect, but because competition is so fierce and the best from anywhere in the world can succeed, subpar ideas, bad business models, and harmful governance regimes will tend to fail more quickly. The speed of error correction is one of its great strengths.

The Internet is speeding the economy in other ways. Using elastic cloud resources from Amazon Web Services, for example, a tiny software developer can scale its Internet presence as fast as it wants. Virtual server capacity and bandwidth can be bought as needed, on-demand. Engineers and scientists can simulate machines or physics experiments. Hollywood studios or video game prodigies can build photorealistic real-time virtual worlds. All of this takes place while using supercomputers in the cloud, paid for by the megabyte or the minute. Netflix, for instance, runs its entire massive streaming operation, which at times approaches a third of all Internet traffic, from Amazon's cloud centers.

The speed of this new economy will continue to depend on broadband and wireless spectrum. The digital economy is centered in the United States in no small part because a decade ago, we unleashed fiber optic and mobile network investment, and America surged to become a world broadband leader. In 2011, U.S. companies invested nearly $500 billion in infotech, $66 billion in broadband networks alone. When we ran out of room in cities, we built skyscrapers. When we confront capacity bottlenecks on the Internet, we need the ability to invest in more wired and wireless bandwidth.

This is one facet of the Net's genius: it is potentially infinite. There are no fundamental or geographic limits. It already scales across the globe, but it will continue to scale along new axes and into new realms. We can, in effect, build skyscrapers upon skyscrapers. Or we can escape, as it were, from existing communities or business models and establish new colonies elsewhere on the Web's endless frontiers. The Net should grow forever, and its benefits should far outweigh the inevitable costs that even the best technologies impose.

Yes, the Net can be fun and superfluous. It is, however, much more. It is deeply affecting every business and industry. It is just beginning a sweeping transformation of education at every level. Today, a new wave of entrepreneurs is applying digital technologies to radically advance medicine. For example, consider the $30 million Tricorder X Prize that will go to the team building a handheld diagnostic computer modeled after the Star Trek device. Fantasy? Maybe not.

Why has the digital economy been such an enterprising place, can America's physical places, our cities and states, learn anything useful from it?

Like the most enterprising places, the digital world encourages information to flow freely. It connects people and ideas. It allows experimentation and promotes both collaboration and competition. We build both the physical and logical infrastructure of the Net in a bottom-up, dynamic, cooperative manner. Yes, there are basic (and competing) standards of interoperability but few arbitrary rules imposed from on high. If the rules become obstacles, we just invent a new, more attractive set of rules. Merit tends to prevail. Most importantly, incumbent entities rarely are protected, and entrepreneurship – at firms big and small – thrives.

It would be folly to suggest our cities and states operate as some digital utopia. That is not the point. As the recently issued 2012 Edition of the National Chamber Foundation's Enterprising States study and the accompanying articles in this Summer edition of the Business Horizon Quarterly suggest, the places that most encourage and reward experimentation, investment, and entrepreneurship are likely to see the most success. In today's cyber places, we can keep going, keep building, keep exploring without ever reaching the horizon. That is an enterprising place without end. ■

NCF Scholar Bret Swanson is President of Entropy Economics, a research firm focused on technology and the global economy, and of Entropy Capital, a venture firm that invests in early-stage technology companies. Swanson is also a "Broadband Ambassador" of the Internet Innovation Alliance and is a trustee and investment committee member of the Indiana Public Retirement System (INPRS). Bret Swanson writes a column for *Forbes.com* and often contributes to the editorial page of *The Wall Street Journal*.