Software Advances

One of the most defining software advances in this time period is the rise of mobile apps and mobile compatible software. Smartphones became ubiquitous during this time period and as they became more popular, the demand for new, scalable mobile applications increased. Mobile applications have led to the creation of new programming languages, new IDEs, and new jobs.

An interesting trend in mobile app development in the past few years is the ideological shift from mobile apps being secondary to a website to being the primary gateway to a product or service. Apps like Tinder and Uber are used exclusively on mobile devices. Features integrated in a smartphone’s operating system like FaceTime are becoming more convenient options for web apps like Skype. Facebook messenger, iMessage, and WhatsApp are replacing traditional calling and texting.

The idea of mobile payments was founded during this time. E-commerce was already thriving, but it didn’t change transactions at the point of sale. The rise of Apple Pay and Android Pay changed the way people paid retailers for goods and services. Applications like Venmo and Square’s Cash app gave people an easy, secure, and cashless way to pay each other. In developing countries, mobile payment has opened up financial services for people who do not keep their money in a bank, but own a smartphone.

This time period was the beginning of utility based cloud solutions. The cloud became something that all people interacted with. Solutions like iCloud allowed users to back up information, share data between related devices, and store more information. Cloud solutions like AWS and Azure are huge, behind the scenes components of many of the websites and applications popular today.

Cloud computing led to the rise of software as a service, a new delivery model in which software is subscription based. Instead of buying yearly updates on a CD, updates are automatically pushed to users by the creator of the software. Vendors do not have to use resources to maintain old versions of their software because there is only one, continuously updating version. Products like Microsoft Office and Adobe Creative Cloud have made software more accessible for users and easier to maintain for producers.

https://en.wikipedia.org/wiki/Software_as_a_service
https://en.wikipedia.org/wiki/Mobile_payment

Hardware Advances

In recent history, the biggest trend in computing hardware has been not only making computers faster, but making them smaller as well. While smartphones had been prevalent for a few years, in April 2010, Apple released the first iPad. While a variety of tablet computers had
been previously by companies such as Microsoft and even Apple itself, the iPad was the first tablet computer to become popular. As of 2015, Apple has released 4 generations of iPads and several generations of iPad minis. In the past several years, Android tablets have also become very popular. As with all technology, there is constant innovation in the tablet market. There is a constant movement to merge the phone and tablet market, as we see phones get bigger and tablets get smaller. The past few years have seen the rise of the “phablet”, which is slightly bigger than a normal phone, but not quite a tablet.

http://www.trustedreviews.com/best­phablets­2015_round­up

Mobile phones are not the only market affected by tablets, as the laptop market has rapidly adopted many tablet features in the past 3 years. This has resulted in hybrid laptops, which are half laptop and half tablet. These generally include a touchscreen, keyboard (usually removable), and full operating system. One of the first of these devices to dominate the market was the Surface Pro, released in February 2013. The Surface Pro featured a multi-touch display, a removable keyboard, and full Windows 8. The main separator between the Surface Pro and previous tablets was support for full Windows 8, as opposed to a limited tablet OS, such as the iPad’s iOS.

http://blogs.microsoft.com/blog/2013/01/22/growing-the-surface-family-surface-windows-8-pro-availability-confirmed/

An even newer trend in hybrid laptops is the detachable computer. Whereas many previous detachable keyboard did not function very well as a laptop, the detachable computer is meant to turn from a tablet into a full-fledged laptop. A major downside of the surface pro was its floppy keyboard. This makes it impossible to use on a lap. Detachable computers usually have tablets that snap into a rigid keyboard to make it a standard laptop. Some manufacturers are even able to fill the keyboard with battery, storage, and extra ports that are not available on the tablet itself. We should expect to see much more innovation in this market in the next several.


In addition to making computers smaller, an important growing trend has been to reduce the cost of computing. The Raspberry Pi has been a leading provider of small, cheap computers since its release in February 2012. The original model, Raspberry Pi 1 model A, had a 700MHz ARM processor and a cost of $25. The Raspberry Pi 2, released in February 2015, has 4 ARM cores, with a cost of $35. While the Raspberry Pi doesn’t have enough processing power to become a user’s main computer, it is very sufficient for certain tasks. For example, it is a very popular and cheap choice for creating a home media center. Due to the low price point, it is also extremely popular for use in schools. It is a popular choice for trying to get students into coding, and one version even ships with multiple programming environments designed to help students get interested in coding. The Raspberry Pi has inspired many competitors, which means we have only seen the beginning of wave of small, affordable computers.

Important People

Bram Cohen and Ashwin Navin were the founders of BitTorrent. BitTorrent is a peer to peer download protocol, originally used by many to illegally share files. By 2008, BitTorrent improved and adjusted their service to target companies and software providers for legal file sharing. By adjusting their platform to assist in fast, larger-file downloads, BitTorrent helped make online videos and software downloads more popular beginning in 2008. Today, their mission is “to build a better Internet. To work with people, industries and nations to create better ways to move information. Better ways for creators to make money. New ways for fans to engage, on their terms. Ways to sustain the stuff we share. The Internet promised us this much. And we promise to make good on it.”

http://www.bittorrent.com/company/about

Dennis Crowley and Naveen Selvadurai co-founded Foursquare in 2009, a new type of social media site that entices members’ participation through merits, badges, titles, and occasionally prizes. The company uses “location intelligence to build meaningful consumer experiences and business solutions.” In 2014, the company extended to a second application called Swarm, enhancing the game atmosphere to coins and stickers. This new idea of getting rewards for checking in to businesses has changed advertising and shopping experience.

http://www.entrepreneur.com/article/207004
https://foursquare.com/about

Jack Dorsey not only co-founded Twitter, he helped create Square in 2010. Square was made with a focus mainly on small businesses. The hardware-software combo were free to users. For small business owners, this meant a much cheaper way to accept debit and credit cards directly from a device they already owned. In addition to providing a cheaper way to accept cards, Square is more mobile. Square made its money by taking a small percent of each transaction made. The company has grown, hoping to give “sellers... one cohesive service to run your entire business, from a register in your pocket and analytics on your laptop, to small business financing and marketing tools that drive new sales.”

https://squareup.com/about

Galit BenArtzi, Yotam Shacham, and Yudi Levi founded Particle Code in hopes of designing a “software development kit” for programmers to design apps with that would transcend all OSes and mobile platforms. This would save companies time and money, because they would no longer have to rewrite their code for each OS. The kit would make it easier for small companies and individual developers compete in the application world.

https://www.crunchbase.com/organization/particle-code#/entity

Alexandra Keating and Chairman Fritz Lanman created DWNLD in 2014. DWNLD was created to be a simple avenue for anyone to make an app and upload it to an app store with simple design tools. “DWNLD’s technology can ingest existing digital content and convert it into our proprietary app programming software to create a beautiful native app.”
Zachary Hamed, David Byrd, and Steve Kalisk created a startup in 2015 that allows users to set up a code environment in as little time as thirty seconds, called Bowery. Bowery uses a “cloud-based system” to simplify the setup environments for developers. Users can even share the environment in real time with coworkers. The new startup could change the way the developers and engineers interact and save time throughout companies. “Bowery aims to save programmers time-intensive, repetitive tasks such as setting up coding environments so they more quickly begin working.”

Impact on Society

Between 2008 and 2015, society saw rises in computing speed due to Solid State Drives hitting the market. With this improved technology, laptop sizes decreased significantly, allowing for more powerful portable computing. This increase in the speed of computing is useful in dealing with extremely complex calculation, and even everyday computing, cutting load times, saving consumers lots of time.

The iPad, released in 2010, led to the creation and adoption of thousands of different applications. While not the first portable touch screen device, the iPad increased tablet popularity, leading to society innovations such as presentations, note taking, and the rise in tablet PCs.

Also in this era, social media hit record numbers. The advancement of social media brought about increased online advertisement campaigns, while socialization with old and new friends became easier than ever before, and content sharing became almost instant. Due to this advancement, news could spread across society at an instant with improved communication. Despite all of its upsides, social media also has its downsides. For instance, social recluses become too reliant on virtual relationships and communications, causing issues in social psychological development. Due to increased online presence, cyberbullying and online harassment has been on the rise. Businesses have reported significant time-waste statistics due to distractions caused by sites such as Facebook, Twitter, and Instagram. Finally, privacy issues such as identity theft have become easier with the posting of personal information to the public.
The gaming industry saw the return of virtual reality through devices such as the Oculus Rift and Sony’s project Morpheus. This leads to many new opportunities in game development and allows for increased immersion within the game worlds. Within recent years, consumers have been able to obtain versions of the Oculus Rift, revolutionizing the way video gaming is viewed. While other virtual reality attempts have been made in the past, with current technology, the experience has never been more realistic.

http://www.vrs.org.uk/virtual-reality/history.html

Overall, between 2008 and 2015, the world has seen vast improvements in speed in the hardware of computers due to the popularization of SSDs, communication via the improvements of social media sites, portability as a result of touch screen innovation, and realism in the gaming industry because of developments related to virtual reality. Getting in touch with friends socially or escaping reality using computers has never been so easy due to these innovations.