# MedDigX: Week 1 Key Concepts

(Note that several of the lectures for this week draw on Rainie and Wellman's book, *Networked*. If you are interested in reading further, please see the course syllabus for information on purchasing the book at a discounted rate.)

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## 1.1 | Understanding Social Networks

**Social Network Revolution-** The internet has rapidly transformed social networks in the digital age. Despite the tendency to immediately associate social networks with platforms like Facebook, it is important to recognize that social networks predated the internet but changed in important ways following the internet's advent. Digital technologies transformed relationships between network participants in several ways by facilitating connectivity, weakening group boundaries, and increasing personal autonomy. Together these factors ignited the social network revolution and thereby provided opportunities and stresses for people to reach beyond the world of tight groups.

**The Internet Revolution-** The prolific adoption rate of the internet. While the building blocks of the internet were initially developed for military applications in the 1960s, the worldwide web wasn't available to the general public until the early 1990s.
Around 1993, the early majority went online with the Mosaic browser. It was seen as graphically pleasing-- at least compared to what came before-- easy to navigate, and easy to understand. Within four years, the late majority had joined in. It took radio 38 years to reach that point and television 13 years to reach similar audience sizes

**The Mobile Revolution**- The various ways in which mobile connectivity has dramatically changed the manner in which people communicate and access information. The emergence of mHealth typifies how mobile connectivity along with its anytime, anywhere access is accelerating digital health innovation. The dynamics of the mobile revolution are complex and geographically dependent. Widespread mobile access has only been available in the United States for less than two decades and approximately seven years when it comes to smartphones with remote web connections. In many parts of the world that never had access to wired landlines, the pace of mobile adoption has been much more rapid since mobile access replaced a total absence of telecommunications.

**Social Network**- A set of relations among network members--whether they're people, organizations, or nations. It's important to note that social networks are not the sum of individuals or of two-person ties. Consequently everyone is embedded in structures of relationships that provide opportunities, constraints, coalitions, and work-arounds.

**Widespread Connectivity**- In our contemporary world it's easier and cheaper to communicate across the world due to affordable, faster, more powerful and personal telecommunication platforms.

**Weaker Group Boundaries**- In the digital age families and households have redefined gender roles and responsibilities with fewer people participating in highly structured and defined civic groups.

**Increased Personal Autonomy**- The coming of the digital age has enabled many people in countries like the United States to undertake flexible, creative work instead of factory-based manufacturing jobs. This term also addresses the trend that identity categories like race, sexual orientation, and religion are playing a less defining role than they once did, even though these identities are far from invisible. And lastly it refers to the fact that the old model of lifelong employment at a single occupation, followed by retirement and a pension, has almost completely disappeared.

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## 1.2 | The Internet And The Digital Revolution

**Diffusion of Innovations Theory**- A theory developed by Everett Rogers in 1962 which stated that new technologies reach market saturation by moving through a series of groups starting with early adopters and ending with laggards.

**Technological Determinism**- Technological determinism refers to the idea that the way technologies are designed completely determines how people use those technologies.
One of the core problems with this way of thinking is that it ignores the fact that technologies are developed by people who are embedded in cultural contexts. In other words, technologies are imbued with cultural values from their inception. They don't just pop out of nowhere.

**Moore's Law**- An observation developed by Gordon Moore in the 1960’s that postulated that computing and processing power will double every two years. This theory has proven to be accurate and thus has led to rapid improvements in cost, usability and attractiveness of computing.

**Bandwidth**- The maximum rate at which digital information can be transferred over an internet connection.

**Affordances-** Affordances are like features that allow users to do something specific with a technology or a design. In their book, Networked, Rainie and Wellman defined affordances as "the possible actions a person can perform on an object."

**The Digital Divide-** The disparities present with regards to internet access. The post-PC world has led to the emergence of the mobile digital divide as well. It is important to consider the digital divide when constructing digital health interventions.

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## 1.3 | mHealth And The ‘Mobile Revolution’

**Mobile connectivity-** The ability for smartphones and other devices with cellular radios to connect to cellular frequencies in order to access the internet remotely. In many parts of the world that never got wired with landlines, mobile adoption happened much more rapidly than it did in the United States. In the less developed countries worldwide, mobile access was a true revolution because it did not replace landlines. It replaced a total absence of telecommunications.

**Mobile Health (mHealth)**- Mobile health is a field that has developed around the use of mobile phones, smartphones, and other connected devices for the purpose of improving health. This field is rapidly expanding and it is just now reaching a level of maturity where the validity and the efficacy of certain innovations have been tested through randomized controlled trials.

**The Randomized Controlled Tria**l- The traditional gold standard to assess and evaluate healthcare interventions. Note that the rapid development and adoption of digital health technologies is raising questions about whether the slow and expensive approach of randomized controlled trials is still the best model for assessing these tools.

**One Way Broadcast Model**- A traditional communication model in which the locus of control was positioned in a top down fashion with a select few institutions managing the communication strategy.

**Social Connection Model**- An emerging communication model in which the locus of control has fundamentally shifted from the old top down one way broadcast model to a bottom up approach. This shift in the locus of communication control raises questions about understanding users' sense of space,time, presence, social connectedness, availability, and findability.

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## 1.4 | The Internet and Patients

**State of the Self-Diagnoser-** The fact that health consumers are increasingly using internet access to learn and understand themselves and their conditions. Nearly 35% of Americans have gone online to figure out a health problem. Of those, 36% discovered they needed the help of a professional, while 38% found that they could take care of the problem themselves. The numbers of those with chronic conditions who search for their problems online are even higher and approach 60%.

## 1.5 | The E-Patient

**e-Patient**- An e-Patient is a health consumer who participates fully in his or her medical care. e-Patients gather information about medical conditions using the internet and other tools. Specifically, e-Patients are equipped with the skills to manage their own condition. They're enabled to make choices about self-care. They're empowered. They are equals in their partnership with the physician involved in their care. And finally, in the words of Eric Topol, they're emancipated.

**Paternalistic Patient/Doctor Relationship**- A form of patient doctor relationship in which the doctor has traditionally provided information with the assumption that patients will follow whatever the doctor orders. In the digital age this relationship has evolved to be one that's more equal and balanced between patients and physicians. Information and technology have catalyzed this changing dynamic.