

Text of verbal introduction to chapter 1 of The Internet, Mobile Computing and Mobile Phones in Developing Countries

Hi my name is Les Cottrell, I am from Stanford University California and I contributed the chapter on "The Internet, Mobile Computing and Mobile Phones in Developing Countries".

The recent explosive growth of mobile science draws upon three main enabling technologies. These are the Internet, wireless and especially smartphones, and the miniaturization of computers.

The chapter addresses in some detail the first two enablers: the Internet and smartphones.

The chapter starts out by providing a brief history of the Internet and its original goals. It then goes onto today's challenges, expectations, and utilization.

Since 1969 the Internet has grown from 4 hosts to almost a billion. By 2020 at the current rate of progress, we may expect that close to all people on the planet will be Internet users. In the meantime, there is still plenty of room for growth especially in developing regions such as Africa with a population of a billion of which 85% are not Internet users.

We then look at the history of Mobile/Cellular phones, how they work, and the current state including concerns such as security.

AT&T submitted its proposal for cellular services to the Federal Communications Commission in 1971, just two years after the Internet started. It took a dozen years and \$100M in development costs before the first generation analog mobile phones were available in 1983. Today, according to the ITU there are about the same number of mobile subscribers as there are people in the world. Early this millennium the first commercial third generation (3G) mobile phones supporting mobile Internet access became available. This enabled the rapid growth of so called smartphones. Smartphones now account for over 25% of all mobile phones in use worldwide and over 50% in N. America and Europe.

The chapter then illustrates the performance of the Internet worldwide since 1998 to the present and compares it to development indices from the UN and the ITU. The chapter concludes by looking in some detail at the Internet performance for Africa which, relative to the rest of the world, has been getting worse. Fortunately new submarine cables are being installed (initially for soccer's world cup) to both the East and West coast of Africa. This is leading to a dramatic increase in the Internet capacity available, reduces the round trip times and improves performance (compared to satellite links) and most importantly provides competition and reduced prices. Thus there is hope that Africa will be able to start to catch up with other regions of the world.