Emerging ICT Trends
Affecting Progressive Publication
of Newly Translated Scripture

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Tags: progressive publication, ict, ict4b, mobile phones, minority languages, scripture use, mp3

Abstract

Progressive publication is the practice of distributing portions of Scripture in a language as soon as it is translated, rather than waiting until there is a complete New Testament before publication. A brief introduction to progressive publication is provided. Information and Communication Technology (ICT) such as mobile phones and village radios, which affect progressive publication are examined. Macro-trends are documented, and then how the trends play out at the local level are explored. The capabilities of the average phone are explained in detail. Some challenges to progressive publication are identified. An appendix for American readers explains how mobile phones work in the developing world.
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Note: In keeping with contemporary American English usage, this document uses “smartphone” as a single word, while “feature phone” is two words. Neither is hyphenated. (Wiktionary, smartphone and feature phone)
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Introduction

I was in the heart of Africa, on the edge of the Sahara desert, sitting in a hut in the village where my fiancée worked with a team of nationals to translate the Bible. I was the guest of honor at their meal. We were having chicken and rice, but before the chicken could be eaten, it had to be cooked. Before it could be cooked, it had to be plucked. Before it could be plucked, it had to be killed, and before it could be killed, it had to be caught. Needless to say, the chicken was not thrilled with any part of this plan, and was not cooperating.

So we had several hours of downtime, sitting in the hut with the elders, just talking and listening to the village radio. Across the developing world, this shared relational time gathered around the radio listening to music is common and unremarkable.

Eventually though, I realized that we were not listening to a short-wave broadcast. In one important way, this radio was slightly different than all other radios I had seen previously. It had a SD card sticking out of it. We were actually listening to music on a little Secure Digital (SD) card about the size of my fingernail.

All over the world, the village radios sold in marketplaces have changed. Instead of tape, they now support SD and USB slots. Whether in a suburban shopping mall in the United States, or in the remotest parts of Africa, Asia, or the Pacific, it is now rare that someone does not have access to some kind of device that can play audio recordings.

The remainder of this paper will provide a brief introduction to progressive publication, and then look at Information and Communication Technology (ICT) trends that are affecting progressive publication. Both macro-trends and their practical impact at a local level will be explored. The capabilities of the average phone as it exists in someone's pocket today will be explained in detail. Lastly, mobile phones
work quite differently in most of the world than in the United States, so an appendix explains the differences.

**What is Progressive Publication?**

In the past, translations often took fifteen or more years, and publication was both expensive and time-consuming. Today, The Seed Company (TSC) and others are using innovative techniques to significantly reduce the duration of translation. The Seed Company states,

> Many TSC projects produce usable Scripture long before there is a completed NT.

Traditionally, translation projects often haven't published products until a finished NT or OT is completed. The Seed Company encourages progressive publication as soon as there is a completed work product (typically one or more books of the Bible). (TSC, 2013, *Progressive Publication* - SeedConnect)

Today, Luke Partnerships and other new methodologies are often producing portions of completed, consultant-checked Scripture years before a total New Testament is available. Typical early works include The Gospel of Luke and The Jesus Film, Acts, Psalms, Genesis, Stories of the Prophets, and Lectionaries. These often lead to follow-on projects that complete the New Testament and eventually the entire Bible (*Ibid.*). At the same time, the cost and effort of digital publication has plummeted.

Progressive publication gets portions of Scripture into the hands of the Church as quickly as they become available, rather than making people wait many years for a completed New Testament. The primary requirement is that a portion of Scripture has been through all of the Forum of Bible Agencies International (FOBAI) steps, such as Consultant checking, to ensure that it is a quality translation, and that it may stand on its own (FOBAI, *Basic Principles and Procedures for Bible Translation*, 2006).

When considering progressive publication, the two main issues are format and distribution mechanism.
Formats for progressive publication include MP3 audio, digital book (EPUB & PDF), video, and traditional booklets. Distribution mechanisms include websites, SD cards, and Bluetooth. (TSC, 2013, *Progressive Publication - SeedConnect*)

**Formats**

**MP3** audio recordings of Scripture are the most popular format for progressive publication. Over half of the world's population now owns a mobile phone capable of playing MP3s (see below), and nearly all of the remainder have access to village radios and other MP3 capable devices. MP3 is ideal for progressive publication of minority language Scriptures because it does not require literacy, but can lay the groundwork for assisting preliterate people in learning to read their own language. The technology and knowledge to record MP3s is also widely available, “It is relatively easy to create good quality audio with inexpensive equipment and only a little training. Experts such as Hosanna/Faith Comes By Hearing and JAARS' Vernacular Media Services (VMS) can provide full service high quality recording. There are also plenty of local experts in many geographies who can help make recordings.” (Ibid.) *HearThis* is a software system that interfaces directly with ParaTExt to greatly simplify audio recording of Scripture by non-experts. It is being used successfully in areas as diverse as Nigeria and India. (CIC-SGB Team, 2013, *Translation Impact Committee Report*)  The Seed Company, Hosanna/Faith Comes By Hearing, Pioneer Bible Translators, and Digital Bible Society all have active projects to explore crowdsourcing or other web-based creation, checking, and distribution solutions.

**EPUB** is the international standard (ISO/IEC DTS 30135-1) format for digital books. It is widely supported by all major electronic platforms capable of displaying books (Amazon's Kindle requires conversion first). ParaTExt outputs simple EPUB directly, and the Pathway plugin provides a wide range of formatting options, making it straightforward to produce freshly translated Scripture in this
PDF (Portable Document Format) is the international standard (ISO 32000-1) format for digital emulation of paper. The principle difference between EPUB and PDF is in how they flow text. EPUB is designed to responsively reformat text depending upon the size of the display window, while at the same time preserving integrity to the layout of the original document. PDF is intentionally designed to exactly duplicate paper; it is not responsive, and reading it on a small screen requires extensive scrolling. Because of this, PDF is not an ideal format for progressive publication. Never the less, because it is well known and trivial to produce, PDF is a common progressive publication format.

Video formats are commonly used for displaying The JESUS Film, a faithful retelling of the Gospel of Luke. There are a number of video formats, and they are outside the scope of this document to describe. See Renew World Outreach’s Media Conversion Training Center for an introduction. Video formats have proven extremely popular with minority language speakers. Methodologies such as VAST are reducing the time it takes to produce The JESUS Film significantly. According to Dr. Larry Jones, Senior Vice President for Bible Translation of The Seed Company, VAST has “produced a full rendering of the The JESUS Film script (comprising about 1/3 of the Gospel of Luke) in the space of a month.” (Dr. Larry Jones, VAST Translation Manual, p7)

Traditional booklets are easy to ignore in the rush to digital, but as The Seed Company points out, “Nobody has to be shown how to turn one on, and they don't require a battery.” (TSC, 2013, Progressive Publication - SeedConnect) Print On Demand (POD) services hold the promise of reducing costs. They are more commonly used for community testing than for actual widespread distribution.
**Distribution Mechanisms**

**Websites** are a popular progressive distribution mechanism. The key to progressive distribution on the web is localization (*L10n*). *L10n* refers to the ability of the entire website, including navigation bars and associated text to appear in the minority language. Kalaam Media explains it as, “Translating...several words and phrases such as 'download', 'mp3', and the books of the Bible into your publication language, so that products and words on the site can appear in your publication language.” (Kalaam Media, 2012, *Kalaam Media Welcome and Introduction*, p6) Many sites popular with westerners offer some minority Scriptures, but only if the reader can navigate a site in a majority language; this places them beyond the reach of many newly literate seekers. These sites also typically only publish complete New Testaments.

Kalaam Media has had success with a system which produces a separate website for each minority language, completely localized in its own language. It is inexpensive, secure, and easy for newly computer literate people to maintain and administer. Importantly, Kalaam's system is built on industry-standard LAMP and Drupal technologies and handles non-Roman scripts and RTL (right-to-left) languages correctly.

**SD cards** are small storage chips about the size of a fingernail. Most phones and many computers will read them, similar to a USB drive. Because they are used in most phones (both feature phones and smartphones), SD cards are commonly available, popular, and well understood in the developing world. In creative access areas, SD cards are an ideal distribution mechanism because they are easy to conceal. SD cards are good for progressive publication because they may be updated with new Scripture as...
it becomes available. They are also easy to duplicate locally in small quantities. Masters can be as simple or complex as desired. The Digital Bible Society and secular firms can produce larger quantities and sophisticated masters.

Even in remote areas such as Papua New Guinea, SD cards are having an impact through progressive publication. Marsha Relyea Miles writes,

> The Aruamu leaders were extremely happy as they listened to the Scripture. They prayerfully dedicated this recording to God for his purposes, and then spent time strategizing regarding how to effectively distribute this exciting new tool, for maximum impact.

> They plan to set up 'listening groups' in some parts of the group, to listen through and discuss the entire New Testament. Many villages have 'boom boxes' that can use SD cards to play music; so the leaders believe that this would be a good way to distribute the recorded Scripture in some areas. Also, many Aruamuts are now purchasing cell phones which have SD micro-chips. So the leaders want to make the Scriptures available this way, as well. Can't you see it now? Aruamuts of all ages walking up and down jungle trails with earbus in their ears, listening to the Word of God! Wow.

> The leaders are planning an Evangelistic Crusade for early Fall, at which the recorded Scripture will be launched so that all Aruamuts know about it.” (*Travelin’ Miles*, 2013)

**Bluetooth** is the ultimate progressive publication mechanism, and end-goal of most distribution schemes. Bluetooth is a way to transfer data wirelessly from one phone or computer directly to another; it is supported by most hardware. Since developing world people commonly transfer music by Bluetooth, it is widely understood and requires no training, hardware, or expense. When Scripture gets to the point where people are distributing it peer-to-peer by Bluetooth, it is uncontrollable and unstoppable. The Seed Company explains, “This is probably the most powerful way to distribute
materials because the people spreading it are the nationals who are native heart language speakers. They are doing it because they are excited about the materials! They can distribute it to far more people than we could possibly reach with an SD card or website.” (TSC, 2013, *Progressive Publication* - SeedConnect)

**ICT Industry Trends**

**Mobile Phones**

According to Tomi Ahonen, the leading mobile industry analyst, there were 1.3 billion computers (desktop models, laptops, and netbooks) in 2011; 350 million new ones are being added per year. There were 1.7 billion televisions, with 275 million new being added per year. Dwarfing this, there were 5.9 billion active mobile connections (SIMs) in 2011. New SIMs were being added at a rate of 1.5 billion per year. (*The Phone Book 2012*, p5)

By the end of the next year, something marvelous happened. Early in 2013, the total number of active SIMs exceeded the world population of seven billion! (ICT 2013, *The World in 2013: ICT Facts & Figures*, p1 and Tomi Ahonen, 2012, *The Phone Book 2012*, p12) One half of all humans now own a mobile phone. (GSMA and A.T. Kearney, 2013, *The Mobile Economy 2013*, p4 and *The Phone Book 2012*, p8) This will rise to 80% of world population by 2017. The number of active SIMs outnumbers the penetration rate of phones by 2:1 for three reasons: First, phones that use more than one SIM are common in the developing world. Second, one person owning
more than one device is common in the developed world (e.g. both a smartphone and tablet). Third, 340 million SIMs are used in the rapidly growing field of telematics (automated data collection and device control) (*The Phone Book* 2012, p16, 18-19).

**Internet**

Internet trails mobile phone use, but is catching up quickly. 39% of world population has mobile Internet (including 2G EDGE) in 2013. This includes 77% of the developed world, but only 31% of the developing world. (ITU, 2013, *World Telecommunications / ICT Indicators Database*) In 2012, 1.6 billion people had broadband Internet and this will grow to 5.1 billion within five years (2017), at a remarkable 26% CAGR (Compound Annual Growth Rate). LTE/4G is growing fastest of all. (GSMA and A.T. Kearney, 2013, *The Mobile Economy 2013*, p8)

The difference in these two statistics is that mobile Internet includes only wireless Internet, but includes 2G EDGE, which is common throughout the developing world, while the second covers all high-speed Internet, including wired cable and DSL connections, which are more common in the developed world. EDGE is adequate for checking email, but is too slow for pleasant web browsing or media streaming.
2012 saw significant statistical disagreement over the percentage of mobile phones which are smartphones. Reputable sources disagreed. GSMA and A.T. Kearney's *The Mobile Economy 2013* placed smartphones at 25% of all mobile sales (p13). Tomi Ahonen's *The Phone Book 2012* placed smartphones at 42% of all mobile sales (p39, p73). This appears to be because one vendor, Nokia, rebranded its Asha line of feature phones as smartphones. Relabeling a brand for advertising purposes does not change reality. (Volpe, 2012, *Nokia outs Asha 308 and 309, deems Series 40 smartphone-worthy*)

In 2013, though, there is broad industry consensus that more than 50% of all handsets shipped will be smartphones (Tomi Ahonen, 2012, *The Phone Book 2012*, p74; Gartner, 2011, *Gartner Says Android to Command Nearly Half of Worldwide Smartphone Operating System Market by Year-End 2012*; (Gartner, 2013, *Gartner Says Smartphone Sales Grew 46.5 Percent in Second Quarter of 2013 and Exceeded Feature Phone Sales for First Time*).

### Brands

According to Gartner, 79% of all smartphone sales in 2013 are Android (*Ibid.*).

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<thead>
<tr>
<th>Rank</th>
<th>Manufacturer</th>
<th>market share (Q1 2013)</th>
<th>Primary OS</th>
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<tbody>
<tr>
<td>1</td>
<td>Samsung</td>
<td>32.4%</td>
<td>Android, Feature-phones</td>
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<tr>
<td>2</td>
<td>Apple</td>
<td>17.6%</td>
<td>iOS</td>
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<tr>
<td>3</td>
<td>Huawei</td>
<td>4.9%</td>
<td>Android</td>
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<td>LG</td>
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<td>5</td>
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<td>4.2%</td>
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<td>6</td>
<td>ZTE</td>
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<td>Android</td>
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<td>Sony</td>
<td>3.8%</td>
<td>Android</td>
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<td>8</td>
<td>Coolpad/Yulong</td>
<td>3.3%</td>
<td>Android</td>
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<td>Nokia</td>
<td>2.9%</td>
<td>Windows, Feature-phones</td>
</tr>
<tr>
<td>10</td>
<td>Blackberry</td>
<td>2.8%</td>
<td>Blackberry</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>48.1%</td>
<td>Android, Feature-phones</td>
</tr>
</tbody>
</table>

(Source: Tomi Ahonen, 2013, *Q1 Numbers in Bloodbath Year Four: Smartphones Galore*)

The most important emerging trend in brands is the astonishing collapse of Nokia. In 2010, 33.7% of all mobile phones sold worldwide were made by Nokia. It dominated the market in a way rarely seen in any industry. By 2012, two years later, this had slipped to 5%; in 2013 this slide continued to under 3%, and they were purchased by Microsoft. See the section, “The Fall of Nokia” for additional details.

Blackberry also slid into irrelevancy, dropping from 16.1% in 2010 to 4.8% in 2012; its future is unclear amid plans to take it private and speculation the company may be broken up (Austen, 2013, *BlackBerry's Future in Doubt, Keyboard Lovers Bemoan Their Own*; Cohen, 2013, *Breakup Still Likely Exit for Blackberry*).

Taking Nokia's place, Samsung rode the rise of Android to go from 8% of the global market to 30.9% in 2012, becoming the dominant handset manufacturer worldwide. Samsung has been more effective at competing profitably with Apple than other Android brands.

Huawei, ZTE, LG, and Lenovo have also grown their phone brands into significant market share.
The surprising thing to many Americans, because of marketing in North America, is the invisibility of Apple in the developing world. Apple is second behind Samsung in global market share, but it sells two-thirds of its phones in North America and Europe, and most of the rest in China. Apple does not have active distribution channels in Africa outside of Egypt and South Africa, and does not show up in African phone statistics at all. (Tomi Ahonen, *The Phone Book 2012*, p67, p84, p138)

MediaTek is a company that few Americans have heard of and they do not show up in statistics of brand market share, yet they are perhaps the most powerful mobile phone company. More than any company besides Nokia, MediaTek is directly responsible for the mobile phone revolution. MediaTek's innovation was to avoid the handset business and focus on producing just the chipset, with complete diagrams, firmware, and everything else needed.

Even a tiny company can now purchase MediaTek chips, drop them in a cheap plastic case with a battery and a keypad, and have a functioning mobile phone ready for resell. On paper, Samsung is the largest manufacturer of smartphones, about twice as large as #2 Apple. But the “Other” category, is actually larger than Apple. Nearly all of the brands in this category, along with #3 Huawei and several of the brands in the mid-range of “Top 10”, actually use MediaTek inside. MediaTek-internal phones dominate the developing world markets. MediaTek ships in excess of half a billion phone chipsets every year and nobody has ever heard of them. (Ricknas, 2012, *MediaTek Lays Groundwork for Cheaper Android 4.0 Smartphones*; Murariu, 2012, *MediaTek is Now the 4th Chip Design Company in the World*)

Analyst reports from even six months ago are already out of date. Android is expected to solidify at between 80-85% of all smartphone sales in the coming year, while Apple will maintain 10-12% market share. All other brands will fight for the remaining 3-10%.
Important Caveat

The remainder of this paper will examine how these macro ICT trends are playing out at the micro local level, affecting publication of newly translated Scripture. China, India, Africa, and the Pacific have 4 billion people. An important caveat needs added:

**Stereotyping 4 billion people is dangerous!**

Almost anything said will be strongly true of some geographies, and equally untrue of other locations. Never the less, some important trends are emerging that are worthy of note. In 2011, the author traveled 4000km on public transport buses across Africa investigating how these trends are affecting local people and markets. This was followed up with addition trips in 2012 and 2013.

In the following, as a broad generality, Asia is often 1-2 years ahead of Africa, and the Pacific islands are 1-2 years behind Africa.

ICT Trends at the Local Level

**The Average Mobile Phone Today**

The average phone sold in the marketplaces around the world this year is an Android smartphone. But in the developing world, people do not discard perfectly functional technology just because something “cooler” has come along. Phones have a long life in the developing world. Tomi Ahonen reports, “1.2 billion units or about 22% of all phones in use are smartphones at the end of 2012.” *(The Phone Book 2012, p74)*

The “average” mobile phone in someone's pocket today is not a smartphone. It is a feature phone, but one which is quite far advanced beyond the feature phones of years past. More than 50% of all phones
currently in use today contain the following features (*The Phone Book 2012*, pp42-43):

- Camera
- Color Screen
- MMS Picture Texting
- Java
- FM Radio Receiver
- Full HTML Browser
- Media Player
- Bluetooth
- SD Card
- 3G High Speed Capability

Several of these features are critically important for progressive publication.

Nearly all phones (except “village phones”; see below) include a media player; this is a game changer for Scripture distribution. Combined with village radios, it means nearly everyone on earth now has access to an MP3 audio player without requiring special hardware. **This is a golden age for orality, audio Scriptures, storying, or anything that can be recorded in MP3 format. It has never been easier to spread the Gospel even to the preliterate.**

Video is somewhat more problematic. Most phone media players are capable of some form of video, and some ministries are having good success with it, but results vary widely as far as formats and quality. Expert advice is helpful for progressive publication of video.

In the past, phone browsers had only the most basic capabilities. Browsing the Internet on a phone was like reading a book through a soda-straw. Today's feature phones' browsers are still not competitive
with Firefox or Chrome, but they are vastly better than they were only a few years ago. They are capable of rendering moderate websites acceptably, and smart enough that the Digital Bible Society's Treasures... series of Scripture products will responsively adapt to display the best content possible on the given hardware (Treasures Libraries).

SD cards and Bluetooth both provide strong ways for getting content onto phones. 3G for high speed Internet access provides a distribution avenue in some venues, but it should not be assumed simply because most phones support it.

The average phone today supports 3G, but that does not indicate that most people have 3G Internet. Tomi Ahonen explains,

> While handset installed base has a lot of 3G capable handsets, the customer base of paid 3G subscriptions is lagging the handset installed base by a significant degree. This is partly because in many markets the 3G networks have not yet been rolled out, but premium phones are sold already with 3G capability. And often with early launches, not all customers who take a 3G phone will want to sign up to 3G price plans and packages. (The Phone Book 2012, pp46-47)

Many people do have 3G Internet, but there are a number of different things which go into determining if any particular person has 3G access: the phone must physically support it, the carrier must support it, the tower must support it, the carrier bandwidth must not be so oversold as to make 3G worthless, the person must have prepaid for it, and the phone must be properly configured for the specific carrier. In many locations, each of these things is easy to achieve. In some locations, some of them are quite difficult, even for an educated westerner who is familiar with phones. Most geographies have at least 2G EDGE, as long as a person chooses to pay for it.

An emerging trend is that many carriers in the developing world have announced plans to move straight
to “4G” LTE technology (actually 3.5G by technical specifications). Few carriers have actually rolled out live LTE systems yet, but this is the direction toward which the market is headed (Fripp, 2011, *Africa to become a telecoms goldmine*; Tredger, 2012, *LTE in Africa - call it like it is*).

Most progressive publication strategies do not need an “app”. In fact, programming an app may be costly and actually counterproductive. There is a strong case for “keep it simple” and for just publishing content in industry standard media formats such as MP3 and EPUB that can easily be shared among new believers by Bluetooth. Never the less, many ministries choose to do an app because “everyone else is doing it”. Whatever the wisdom of this approach, it turns out that the average feature phone's Java (which is also available on most smartphones) provides the ability to create apps for even modest phones. Tomi Ahonen says that almost four billion phones (nearly the entire installed phone base) now support Java and,

> The Java opportunity utterly dwarfs the total installed base of all smartphones by a wide margin. Java programming is not as sexy as that for an iPhone and the abilities to do cool new tech is less powerful on Java, not to mention the fragmentation of the platform, but by reach, there is no question where most apps should be first considered.” (*The Phone Book 2012*, p122)

Tomi Ahonen also reports that in 2010, “the installed base of cameraphones passed the half-point of the human population.” (*The Phone Book 2012*, p56) This is not impacting progressive publication, but is noteworthy because it is starting to change photo-averse culture in the developing world in profound ways. Corruption officials are now learning that their demands for bribes may appear online the next day! (Reuters, 2013, *Nigerian policeman caught extorting money on camera is sacked*; Channels Television, 2013, *Sergeant Caught on Camera While Asking Bribe Gets the Boot*)
**Market Segmentation by Socioeconomics**

Companies such as Samsung and LG are careful to market different models to different audiences, in order to avoid cannibalizing their high end sales. In major cities, shops for the wealthy sell standard western models. In many cities, there are separate locations where shoppers of lower economic classes can purchase less expensive developing world models of popular western brands. These may be similar in features, but lower in price than the models they sell for the developed world. They often have at least one important feature – dual SIMs – which are not present in western models.

For example, in Jos, Nigeria, there is a high-end LG store which stocks the same models as in Europe, at about 25% more than would be charged there. At Terminus, the downtown market, there are small shops which carry LG models such as the P698 international model. It is similar to the European models, but the screen resolution is lower and it has less storage. It also supports dual-SIMs and is much less expensive.

In most geographies, small marketplace shops sell common phones for the common person. Samsung, LG, Huawei, and the like are commonly represented, but MediaTek white-labels such as TECNO dominate this market segment. Nokia used to compete strongly in this market, but in 2011 and 2012 their market share dropped precipitously; in 2013, they are still present, but in much smaller quantities and not as a desirable “name brand”.

**Market Segmentation by Features**

**Village Phones**

Village phones are intended to be a “starter” phone for the rural person just purchasing
their first mobile phone ever. They are intentionally feature-poor and are notably the only phones manufactured today without an MP3 player. This is an intentional absence, intended to encourage the purchaser to upgrade to a more expensive phone as soon as they can afford it.

The Nokia 1280 is a classic example of the village phone. In 2012, variants on it were available all over the developing world at $20-$40 USD. The specific price in a particular geography is heavily dependent on relative economic prosperity of the region (*The Phone Book 2012*, p38). It is rugged and has a flashlight. Most importantly, it has an astonishing battery life, in excess of several weeks with typical usage (author's direct experience).


**“Normal” Feature Phones**

Normal feature phones are the most common phones used in the developing world today, and their capabilities were described in-depth in the section on “The Average Mobile Phone Today”. They have a wide variety of looks and feels. Tomi Ahonen reports, “over 2000 new handset models are released annually by about 70 manufacturers from over a dozen countries around the world.” (*The Phone Book 2012*, p70) Exploring the markets in East and Central Africa indicates that the number of manufacturers is probably much higher than 70, but most have tiny market shares. This segment was once dominated by Nokia and by MediaTek resellers. Now MediaTek has a near monopoly on it, but all manufacturers, including MediaTek, are doing everything they can to rapidly transition people to more profitable smartphones.

In Nigeria in 2012, vendors in Abuja were pricing these phones extraordinarily high relative to their price in nearby villages and smaller cities such as Jos, in an effort to encourage urbanites to spend only...
$20-$40 additional funds to purchase a real smartphone. This strategy does not appear to have worked, because by summer of 2013, feature phone prices for similar models at the same shops had dropped back to the $40-$70 range.

Tomi Ahonen reports that the typical phone in this class sells for $40-$79 USD (*The Phone Book 2012*, p32).

**Semi-smart or Fake Smartphones**

At any phone market in the developing world, you can see products by Samsung and Apple that bear no resemblance to any model ever produced by them. There are also products that look visually exactly like well known western models. Even their homescreens are quite similar.

As soon as the handsets are manipulated, though, the illusion vanishes. They have resistive touchscreens where real smartphones have capacitive touchscreens; the difference is clear to even a casual user. Their homescreen icons look just like the real thing, but selecting them brings up “apps” that are quickly revealed to be thin graphical skins over the simple text-based feature phone address book, calendar, and messaging. Many of these phones are built around the MediaTek MT6236 chipset.

Imitation is the sincerest form of flattery; counterfeiting is the easiest and surest way to tell which brands are really in demand. Prior to 2012, Nokia, Blackberry, and Apple were the most emulated, but this has shifted and now Samsung is the desirable name-brand counterfeited the most.

Nokia has devoted significant marketing resources to fighting this. They have blamed non-name brand phones for everything from cancer to terrorism, with many developing world media stories that are
clearly made up, planted, or just wildly inaccurate. Some of their ads can be summarized as “you can tell the real Nokia because it lacks all these features of the fake” (Nokia (MMF), How to Spot a fake phone?). A few of these phones are outright counterfeits, but most are not illegal, being nothing but close imitations of their western counterparts. The author has seen identical phones at the same vendor, some with logos making them counterfeit and some without, side by side.

Confusing the market even more, in a case of “if you can't beat them, join them”, Nokia has rebranded their entire line of Asha feature phones and now markets them as smartphones. They still run the same feature phone system (S40, not to be confused with S60 Symbian OS) that they always have (Volpe, 2012, Nokia outs Asha 308 and 309, deems Series 40 smartphone-worthy).

In many cases, particularly of counterfeits, people understand that they are not getting a real smartphone, and they are purchasing the phone because it allows them to appear to afford a more desirable name-brand phone. The author has rarely seen a vendor who intentionally deceives customers.

The Asha phones are more problematic. People realize it is a real Nokia, trust the Nokia brand, and see that they are priced higher than low-end Android phones. Only after purchase do they discover that it does not do everything that a Samsung or TECNO smartphone can do. Nokia's decline in market share is due to other internal factors at the company level (see “The Decline of Nokia”), but their decline in brand trust and loyalty in the developing world may be largely traced to this deceit.

**Women's Phones**

2012 saw the introduction of developing world phones designed specifically for women. In 2013, these became mainstream, with vendors often devoting an entire shelf to them. This is a significant recognition of women's increasing economic power in the developing world. It also is important
because these phones are increasing women's safety in many areas with high rates of gender-based violence.

Internally, the women's phones are usually the same as the “Normal Feature Phones” or “Semi-smart Fake Smartphones” described above. Externally, they either have practical and innovative features, such as neck carrying cords, or they are gaudily decorated in what male designers in China think will appeal to women. Some of them are quite overboard on bling.

**Used Smartphones**

In many locations, used smartphones from Europe and North America are popular. This allows people who could never afford a new name brand phone to get one at a discount. Whenever a new Apple model is released in the west, the older models flood the secondary market in the developing world. Tomi Ahonen says that used phones “are very common in the poorest countries and out of about 625 million total second hand phones in use, about half are used in Africa.” *(The Phone Book 2012, p39)*

On the one hand, this is a good way for people to get otherwise inaccessible phones (since Apple doesn't have a retail distribution network in Africa). On the other hand, many of these used phones have old non-removable batteries with abysmal battery life.

**Real Smartphones**

While the average phone in use today is still a feature phone, the average phone sold is a smartphone. In the developing world, this nearly always means an Android phone. They range from inexpensive phones from TECNO and Huawei up to high-end western models. Many of them have dual SIMs.
Jimmy Wales, the founder of Wikipedia, reports that inexpensive IDEOS phones from Huawei are available for $50 (Lomas, 2012, $50 Android Smartphones Are Disrupting Africa Much Faster Than You Think, Says Wikipedia's Jimmy Wales), but this author (who used one for over a year as his primary phone) has never observed them for less than $65 USD. Tomi Ahonen places the typical price of low-end smartphones at $80-$149 (The Phone Book 2012, p32), and the average price of all smartphones sold in Africa at $180 (Ibid. p36). Prices are falling rapidly.

While screen size and amount of storage may be smaller on low-end models, in most other respects they are functionally identical to expensive models sold in North America or Europe. The high-end models are high-resolution (1920x1080) dual-SIM 5” Android phablets based on the MediaTek MTK6589T chipset, and are comparable to any sold in the United States, at half the price (~$259) (PandaWill, 2013, ZOPO C2 Smartphone). Notably, they are significantly better hardware specs than Apple's latest flagship iPhone 5s.

**Creative Supply Chains**

Major brands and expensive stores imply a regular supply and distribution chain for the largest phone manufacturers. These work as expected for large-scale retailers.

Smaller brands and smaller retailers must be more creative. A number of small shops in a market may go in together on a container full of phones and other electronic consumer goods. A single small shop may send someone out to Dubai for a smaller quantity, brought back in suitcases. Pilgrims returning from the Hajj may bring back a suitcase full of phones; Apple products new in the box can be resold at about twice their western price, making them popular and lucrative. Lastly, as previously mentioned,
used Samsung and Apple products can come from Europe or North America on the secondary market. (Fierbaugh, 2011, *The Viability of Mobile Phones for Language Development*)

**Internet Dongles**

In the developing world, small USB devices called “dongles” are becoming the standard way to connect a computer to the Internet. A dongle physically resembles a USB “thumb drive”, and contains a SIM internally. Tomi Ahonen says, “particularly in the Emerging World, a 3G connection is often the cheapest and most reliable ‘broadband’ data connection for laptops, where the landline broadband can be unreliable, expensive, or simply unavailable.” (*The Phone Book 2012*, p111)

Dongles cost about $40 in most African markets; less when purchased locked from a specific carrier. No statistics are available on what percentage of dongles are locked, but it appears to be between one-third and one-half. This is the only form of locked mobile device which has had any market success in the developing world. This may be because many areas have multiple carriers for voice, but often one of them has 3G service which is clearly superior to the others in a specific location, and thus the ability to switch carriers for Internet is less important.

**MP3 Players Displace Tape**

As described in the introduction, the shortwave village radio is ubiquitous. In the past many people in the developing world would listen to short-wave radios communally...
in groups in the evening. These radios often included tape decks. During the second half of 2011, these radios developed a major new feature: many of them replaced tape decks with MP3s played from SD cards or USB thumb drives. These radios are available in regions as geographically dispersed as East Africa, India, Papua New Guinea, Central Africa, and even war-torn North Africa.

Of the two, SD media is more commonly used than USB. When asked, developing world people usually say that SD cards are more durable than USB “thumb” drives. What they mean is that long skinny USB drives tend to break off easier. It is also likely, though, that SD cards are more popular because they are used in most phones, are readily available in most marketplaces, and are simply more familiar.

This opens exciting possibilities for Scripture Impact! The New Testament is only available in 1185 of the world's 6909 languages (FOBAI, 2012, *Worldwide Bible Translation Statistics*), but many of those New Testaments are available in audio format. Audio Scripture portions are available in even more languages.

Sharing the Gospel with preliterate people using audio New Testaments is a proven methodology. Hosanna/Faith Comes By Hearing has made the New Testament available in audio format in over 640 of languages (Faith Comes By Hearing / Hosanna, 2012, *The Word of God in 640 Languages... And Counting!*). Faith Comes By Hearing has a well-developed program using dedicated audio Proclaimers in a shared listening program. An in-depth 17 month study showed that for every 100 listening groups, 292 people gave their lives to Christ and 14 churches were planted (Henrich, *Evangelism in the Digital Age: Media Case Studies – Volume 1*, p146). The developing world is primed for a massive expansion of audio Scripture-based programs based on MP3s played on phones and radios.

MP3-capable radios lack solar panels or hand cranks for charging, and their search and navigation is limited to Next Track and Previous Track, but they have the following important advantages:
These devices are already widely available. People already own them and clearly they are within the purchasing capability of many people in the developing world. The distribution channel is already established.

People have already made the conscious choice to expend resources on purchasing and charging them. They have decided that they can keep them powered without specialized hardware.

They are already integrated into their cultures. Gathering around the “radio” to listen as a group is a normal part of social activity.

Propagation of materials ceases to be an issue of distribution for organizations and becomes a normal part of their culture. They are already used to getting materials to listen to from the village market on SD, or by trading with other people.

It is far more efficient in cost, shipping, and effort, to distribute SD cards than entire electronic devices.

It gets them away from “the westerner gave me this as aid” and into “I purchased this myself”. Materials are no longer treated as the “white man's message”, and more as their own. Control of materials are pried away from formal organizations, and moved to the people themselves. They are encouraged to take ownership of the results.

MP3 format audio Scriptures are the “low hanging fruit” of village radios and the mobile phone megatrend.

**The Fall of Nokia**

Few industries have ever been dominated by a single company to the extent that Nokia used to dominate the mobile phone industry. Nokia was the only western company in the 1990's and early
2000's who believed that the developing world's poor were wealthy enough to afford inexpensive phones, and smart enough to use them. Nokia came to dominate the phone industry outside of the United States. One out of every three phones sold worldwide carried a Nokia logo. They were loved by the poor, one of whom commented to the author, “Nokia really cares about village people. Their phones last a long time between charges.” (Fierbaugh, 2011, *The Viability of Mobile Phones for Language Development*, p14)

In the face of perceived competition from Apple and Samsung, Nokia's new CEO, past Microsoft VP Stephen Elop, published a memo proclaiming that “Nokia is a burning oil platform…” (Gustin, 2011, *Nokia Standing on a 'Burning Platform', CEO Tells Employees*), despite the fact that both Nokia's market share and profits were actually increasing at the time. His strategy was to dump Nokia's existing successful phone lines, and migrate to an untested Microsoft Windows phone that currently had less than 3% market share (Laul, 2011, *Nokia announces strategic partnership with Microsoft, will use WP7 as primary OS*).

Nokia traded at 11.75 on February 9, 2011, the day before the “burning oil platform” memo. Five days later, it was trading at 8.84. By November 25, 2011, Nokia was down 55% to 5.29 (Yahoo! Finance, 2011, *NOK Interactive Chart*).

This decline was completely self-inflicted and bizarre. Over the course of two years, Nokia's CEO, Stephen Elop, made decision after decision that seemed unlikely to succeed, and didn't. The sad story is documented with overwhelming statistics by Tomi Ahonen in *The Full Story of Nokia and Microsoft* and *Requiem for Nokia Phones*.

As previously mentioned, in 2010, 33.7% of all mobile phones sold worldwide were made by Nokia. By 2012, two years later, this had slipped to 5%; in 2013 this slide continued to under 3%, and Nokia was purchased by Microsoft. (Tomi Ahonen, 2013, *The Do-It-Yourself Elop Analysis*) The Financial
Times notes that Elop's $25 million bonus for the deal means that he will receive, “€1m for every €2.5 billion of corporate value lost under his leadership.” (quoted by Leo Mirani, 2013, in *Stephen Elop just earned himself $25 million by selling off Nokia*)

The impact of this for progressive publication is likely to be both positive and negative. Negative because for all of its recent faults, Nokia really did “get” the developing world. They spent a lot of time and effort figuring out what features really mattered to the world's poor; they made great hardware that was practical and useful to the developing world and progressive publication. Samsung and the other companies replacing Nokia are not doing badly, but are unlikely to devote as much energy and talent to this endeavor.

But it may be positive because the world's leading and dominant phone manufacturer has collapsed, opening the opportunity for innovation and diversity by many smaller players. While most of Nokia's market share has been captured by Samsung, there does not seem to be much brand loyalty yet, and there are lots of smaller vendors scrambling in the markets. It's a wide open, dynamic industry. Both MP3 village radios and mobile phones for women were initially introduced by these smaller manufacturers. There is no telling what great new hardware may appear next that helps make it even easier to take the Gospel to the next billion.

**Statistics and Affordable Phones**

How are all these “poor Africans”, who we are assured are living on less than a dollar a day, affording $50-$100 mobile phones? Because of this question, a number of economists and statisticians have started seriously questioning developing world economic statistics.

It turns out that many statistics are based on antique baselines and assumptions, simply extrapolated out over many years (Jerven, 2013). In a 2010 move welcomed by economists, Ghana switched from a
1960's era computation to the 1993 UN System of National Accounts, resulting in an instant 60% paper increase in Ghana's GDP (Devarajan, 2011). In December, 2013, Nigeria is also expected to announce a newly rebased GDP which will revise their economy upwards by about 60%, making them tied with South Africa as Africa's largest economy. (Atuanya, 2013)

Tomi Ahonen provides an alternative explanation, that rural families in the developing world benefit from classic arrival city remittance economics, “While the parents may be poor farmers in a village that on first glance cannot support mobile network connectivity, some of their adult children now work in a city and can give the parents their old hand-me-down phones, and then these employed children can carry the full cost of the calls.” (The Phone Book 2012, p148) This pattern has been observed by the author in Chad.

Issues for Progressive Publication

An Animistic Sympathetic Magic Understanding of Phones

The format in which Scripture is presented can be culturally important. For example, in many regions people are used to sacred texts having elaborate borders around each page's contents. Dave Parker, an experienced expert in typesetting Scripture for cultures dominated by another major world religion, notes, “Any book with this style of borders is considered to be holy by many peoples, especially in Africa and Western Asia.” (Dave Parker, 10/1/2013 email: page borders and holy texts)

Therefore, it is reasonable to ask how Scriptures are viewed on mobile phones in developing cultures. The Viability of Phones for Language Development relates the following example of sympathetic magic from a nominally Christian village elder:
An elder in one village with poor reception was able to explain that the “signal” comes from the towers, but wasn't clear what that really meant, even at a high level. In a case of sympathetic magic, he explained what to do if you need more signal:

Get a long pole. Put a white bowl on the end of it. It's got to be just the right white bowl; get a good one. Attach a long wire to the bowl. It doesn't have to connect to anything. Stick the pole straight up next to your hut and over the course of a few months, it will gradually lure the signal in so you can use it.

Sure enough, a number of huts in the village sported these poles. The elder was confident that it worked, but conceded that if you really needed a signal, you might have to run to one of the “phone trees” which had good reception, a kilometer outside of town. (Fierbaugh, 2011, pp42-43)

This does not preclude using mobile phones for progressive publication in such a society. After all, this is not that far from the 19,832 listings Amazon offers for “cell phone signal booster” (Amazon.com, 2013, Amazon.com: Cell Phone Signal Booster (19,832 results)), many of which are tiny pieces of foil with little relationship to any scientific amplifier technology. But it does mean that in cultures where such worldviews exist, some care should be taken to avoid misunderstandings about Scripture and the Holy Spirit.
Copyright

Copyright considerations are important for progressive publication. In the past, it has been common to
treat copyright casually when publishing progressively, and just assume that people will ignore it in the
developing world. Western organizations such as Kalaam and DBS require clearly documented
copyright permissions on any works for which they provide services.
This is a brief introduction to a complex legal topic. It is not intended to be legal advice. Consult a
lawyer!

Scripture as Orphan Works

Most, but not all, countries follow the same general Berne Convention copyright law structure as the
United States. Modern copyright is a perpetual grant of ownership. While it theoretically expires, in
practice no copyright has entered the public domain since 1978, due to multiple retroactive extensions
by Congress.

Modern copyright is created automatically when any work is created. No action needs taken to be
burdened with copyright. Explicit action is required to grant anyone permission to use a work. All
printed, audio, film, or digital Scriptures automatically are copyrighted. If no action is taken, this is
actively choosing to prevent a work from being used by anyone else.

The United States Librarian of Congress says that most of the books, TV shows, films, and music
created in the 20th Century are "Orphan Works". This means that the copyright holder has died,
moved, gone bankrupt, or for whatever other reason is unable to give permission to reprint their work.
(The Seed Company, 2013, Copyright for Progressive Publication - SeedConnect)

The Seed Company poses the following example scenario:
Three Mother Tongue Translators (MTTs) translate Luke from a neighboring language's Bible. Legally, in most countries, the individual MTTs jointly own the copyright. But they created the translation as an implied "work for hire" to the national Bible society, which paid them, so it would like to claim ownership; unfortunately they didn't get anything in writing. Two of the translators are elders in the local church, but one has died; his children moved to the city and nobody has any idea where his heirs are. SIL contributed a consultant who checked it; what is his role and ownership interest? The Seed Company funded it through a grant to the Bible society; do we have any ownership? Oh, and it turns out that it is considered a derivative work of the neighboring language's Bible, so those copyrights are "inherited" in addition to any on the specific work. Ultimately, God owns His Scripture, but it quickly gets complicated dealing with human laws. (The Seed Company, 2013, Copyright for Progressive Publication - SeedConnect)

Who owns the copyrights in this situation? This Scripture translation is an orphan work and may be used successfully locally, but it will never be distributed with the assistance of any western organization. This is sadly a common situation in Bible translation.

Why not distribute it anyways? No one really owns God's Word except God and who is going to sue over Scripture? Why are western organizations such sticklers over this issue? The Seed Company explains,

Copyright law is draconian: $150,000 penalty per every single individual copy. Even distributing a couple hundred copies off a website or on SD cards could easily drive even the biggest non-profit out of business. The cost of litigation is high and there are law firms (http://arstechnica.com/search/?query=prenda) whose entire business plan consists of bogus copyright infringement suits. The risk is too great. We are caught in an evil system, but the world is what it is. (The Seed Company, 2013, Copyright for Progressive Publication -
The Christian Commons

There is a solution. *The Christian Commons*, by Distant Shores Media's Tim Jore (2013), provides a simple and workable plan: All Scripture and other Christian literature should be licensed under a Creative Commons' CC-BY-SA license. This permits anyone to distribute it for progressive publication or other purposes. The Creative Commons licenses (https://creativecommons.org/licenses/) have already been reviewed by US and international copyright lawyers.

There are only three steps required by a translation project to implement this solution:

1. At the start of a project, get a Memorandum of Understanding between all parties specifying who owns the copyright. It should specify that all individual translators work as a “Work for Hire” and should be signed by the translators. It should also specify that the copyright owner agrees to release an electronic copy of the work under a Creative Commons CC-BY-SA license.
2. Translate as normal.
3. During distribution, next to the copyright notice include the following:
   
   Distributed under a Creative Commons CC-BY-SA license. See http://creativecommons.org/licenses/by-sa/3.0/ for details.

That is all it takes to ensure that people have reliable and enduring legal access to God's Word. Doing this does not impact a Bible society's ability to produce and sell printed copies of the translation. If the partnering organization is uncomfortable with a CC-BY-SA (Attribution-ShareAlike), then the CC-BY-NC (Attribution-NonCommercial) is also acceptable. Using either of these encourages electronic distribution and allows for future revisions over the long-term while protecting the partner organization's interests.
On September 12, 2013, the Coalition for the Creation of Digital Christian Libraries in Every Language met at Pioneer Bible Translators in Dallas, Texas, with Ken Bitgood of Digital Bible Society presiding. Representatives of a number of different Bible translation organizations attended. During this meeting, it was announced that both SIL and Pioneer Bible Translators have moved to Creative Commons licenses as the default for new translation projects. Haiola, which powers eBible.org and PNGScriptures.org, also endorsed Creative Commons licenses as the preferred license for the hundreds of Scripture products distributed on their sites. There seems to be broad consensus gradually emerging in the Bible Translation community around the concept.

**Distraction: Apple iPhone**

Apple's iPhones and iOS are an inappropriate platform for progressive publication, which in some cases is leading to wasting limited resources. There is a marketing perception in the United States that “everyone uses the iPhone” or that it is the most popular phone. This is not true even in the U.S., where Apple has about 30% market share, behind Samsung (Tomi Ahonen, *The Phone Book 2012*, p98), let alone in the developing world. There are at least four reasons that Apple's iPhone is not suitable for progressive publication and resources directed to the iPhone for distribution of freshly translated Scripture are largely wasted:

1. **In the developing world, iPhones are used only by the rich.** Apple has between 14.2% (Gartner) and 17.6% (Tomi Ahonen) of the global smartphone market, far behind Android's 79% (Gartner, 2013, *Gartner Says Smartphone Sales Grew 46.5 Percent in Second Quarter of 2013 and Exceeded Feature Phone Sales for First Time* and Tomi Ahonen, 2013, *Q1 Numbers in Bloodbath Year Four: Smartphones Galore*). Equally importantly, nearly all of its sales are in the United States and Europe; the only non-western country with significant iPhone sales is
China, where its market share has declined from 9% to 5% (Bloomberg News, 2013, *Apple Loses China Smartphone Market Share to Cheaper Models*). Apple does not have formal distribution channels in much of the developing world. The only way to purchase an iPhone in many parts of the world is to use an informal channel, and the going rate is often double what they sell for in the United States.

2. **iPhones do not allow downloading of media through the browser.** With Firefox, Chrome, Internet Explorer, and Android, it is possible to go to a website and download media files directly. Apple does not permit this on the iPhone's browser. This precludes using a website to simply distribute MP3 or EPUB Scriptures directly to an iPhone.

3. **iPhones do not support SD cards.** Most Android phones and feature phones include an SD card slot in order to provide inexpensive expandable storage for media. The iPhone (along with a few exceptional Android models such as the Nexus 4) does not. Progressive publication media cannot be distributed to iPhone users in the marketplace by SD card. Also, iPhone users must be more carefully with their storage than most phone users because they cannot simply insert a higher capacity or alternate SD card. Once it is full, it is full until something is deleted. So non-Christians are discouraged from watching large files such as The Jesus Film video on an iPhone.

4. **iPhones do not allow sharing of media via Bluetooth.** The Bluetooth implementation that comes on iPhones is primarily for headphones and by default it does not permit sending media files from one phone to another. Nearly all Android phones and feature phones support sending files to another phone, regardless of the model of each phone. iPhones are incapable of distributing Scripture virally, the ultimate goal of most progressive publication.

Apple has architected the iPhone to strongly encourage users to acquire media through the iTunes
Store, where Apple gets a 30% cut of all proceeds. Apple deserves credit for making iTunes available in most of the world, but outside of well-developed countries it is severely restricted and only offers a small quantity of online classes, podcasts, and some apps. It is not localized, which means users must be able to read a major language.

During Eurasia Media Distribution Consultation (EMDC) 2013, the author asked one progressive publication organization why they had an iPhone app but not an Android app. The answer was that their website was fully responsive and worked well from Microsoft Windows PCs on down to simple feature phones, and all devices in between, except for Apple iPhones. They simply didn't feel like they needed an app for any other platform.

There has been speculation that Apple would introduce a less expensive version of the iPhone for developing world markets, which could potentially make it more popular in those geographies. Tomi Ahonen, for example, has stated, “Apple's iOS success depends on Apple successfully introducing lower-cost smartphones into its product portfolio, else its market ceiling due to the high prices of iPhones, is likely to be in the single digits of all handsets.” (The Phone Book 2012, p101-102)

Apple's recently announced 5c was initially believed to be this long-expected lower-cost handset. However, Fran Wang reports in The Age (Australia),

But the new phone will retail in China for 4488 yuan ($786) for the 16GB version, according to Apple's China online store, making it only marginally cheaper than the previous model, the iPhone 5.

It is also well above the $US549 ($588) that an unlocked iPhone 5c will sell for in the US. An unlocked iPhone 5c will cost $739 in Australia.

The iPhone 5s starts at 5288 yuan ($926) in China, whereas the unlocked US equivalent is $US649 ($695). In Australia the iPhone 5s starts at $869. (Wang, 2013, Apple iPhone 5c too
So it appears that there will not be significant changes in the foreseeable future in Apple's market share or features relevant to progressive publication.

**Metrics**

Donors like to be able to track metrics. Church planters, pastors, evangelists, everyone likes to know that their hard work, sweat, tears, money, and sacrifices are not being wasted. Some forms of distribution, such as websites and apps have the potential to provide these metrics.

Sites such as Global Media Outreach's *Great Commission 2020* ([http://greatcommission2020.com](http://greatcommission2020.com)) claim, “You are watching live as visitors come to websites, indicate decisions for Christ, and ask for follow-up!” The numbers (348,526 “Gospel Visits” and 34802 “Indicated Decisions” as of 9/28/2013) are constantly climbing every few seconds. The map bounces around the world showing specific locations where people are accepting Christ in fifteen major languages “right now”. This kind of reporting shows donors are getting value for their resources.

Likewise, YouVersion, which calls itself “the world's #1 Bible App” (*LifeChurch.tv, 2013, Bible - Android Apps on Google Play*), requires the following permissions:

- Your location
- Full network access
- Phone status and identity
- Your social information and contacts
- Your accounts
- Sensitive log data
None of these permissions are required to enable simply reading the Bible. They are all demanded by YouVersion in order to produce metrics and for online marketing to readers' friends. Yes, YouVersion knows when someone has repeatedly been reading that passage about the embarrassing sin with which they struggle.

Progressive publication is not like that. There can be metrics of number of times Scripture is downloaded from a fully localized website in a minority language, or of the number of SD cards initially distributed. But there is no technical way to track the number of times each SD card is copied, that Scripture is transferred by Bluetooth from phone to phone, what passages are read when, or how many people have gathered around a village radio to listen to it. The common techniques described in this paper do not lend themselves to metrics.

The more successful a progressive publication effort is, the less able it is to produce accurate concrete metrics about its success, but the more able it is to produce healthy growing disciples of Jesus. We are releasing the Scripture into the world and trusting the Holy Spirit.

**SD Card Locking**

Many people express concern about distributing Scripture on SD cards. They worry that people will simply wipe the cards and put secular music on them.

Seed Connect explains,

One question that comes up with SD cards is "Can they put music on it?" The short answer is,
"Yes." The Parable of the Sower indicates that some seed will fall on rocky ground. Either Jesus can compete with Justin Bieber or he can't. For 2000 years, he's done pretty well. The longer answer is that SD cards can be write-protected with the correct gear; however, DBS no longer will write protect SD cards because it interferes with progressively updating them when new content becomes available. It also means the cards are totally ruined if there is a problem with the master. (TSC, 2013, SD Cards – SeedConnect)

The technical solution to this is to “lock” the SD cards, such that once they are initially loaded, they cannot be overwritten with any other material. There are three reasons this is a bad idea:

1. **Locking SD cards prevents progressive publication.** The entire point of progressive publication is to get Scripture into the hands of the Church progressively. As additional Scripture is translated, the SD cards should be updatable with additional books. People should not have to wait to hear the Gospel until there is a complete New Testament available.

2. **SD cards used in phones must be rewritable.** In addition to media such as Scripture and music, SD cards put into phones store information which makes the phone work, such as phone numbers and contact information. Locked SD cards is a show-stopper for people using them in their phones. They simply won't – can't – do it.

3. **Locked SD cards with mistakes in the master are unusable.** One major Scripture SD copier ended up with > 15,000 useless SD cards because the master used in the duplication process had mistakes due to a technical problem.

Ultimately, we cannot force people to listen to the Gospel. Unlocking SD cards and taking the risk that the message will be “wasted”, is biblical. Jesus said,

“Listen! A sower went out to sow. And as he sowed, some seed fell along the path, and the birds came and devoured it. Other seed fell on rocky ground where it did not have much soil. It
sprang up at once because the soil was not deep. When the sun came up it was scorched, and because it did not have sufficient root, it withered. Other seed fell among the thorns, and they grew up and choked it, and it did not produce grain. But other seed fell on good soil and produced grain, sprouting and growing; some yielded thirty times as much, some sixty, and some a hundred times.” (Mark 4:3-8 NET)

It is a risk, but it is one that is working out in real life.

Conclusion

Half of all humans now own mobile phones. Nearly all the rest have some kind of access to MP3 players. Access to EPUB digital book readers (such as low cost smartphones) is spreading rapidly. Emerging ICT trends such as village radios, women's phones, smartphones, and 3G Internet dongles ensure that it has never been easier or less expensive to spread Scripture as soon as a stand-alone portion is translated and checked. Websites, SD cards, and Bluetooth provide easy mechanisms for distribution.

One evangelist in South Asia described progressive publication this way: “We put all our materials on an SD chip. Each village, each evangelist, and each social or healthcare worker gets a player. A few will overwrite them with music, but mostly they take good care of them and bring the chips back regularly for more stories to be added... We are planting seeds that even the villages can hear.” (TSC, June 2013, Progressive Publication Testimonials - SeedConnect)

Appendix: How Mobile Phones Work in the Developing World

This appendix is from The Viability of Phones For Language Development, by Stephen Fierbaugh, International Literacy And Development (ILAD), 2011. Used under a Creative Commons Attribution-
The Mobile Phone Mega-Trend

The rapid expansion of mobile phones is a mega-trend which has transformed the developing world. According to Tom Phillips, 90% of the world's population now has mobile phone signal coverage (2009, p4) and in *Measuring the Information Society*, the International Telecommunications Union (ITU) predicts “it will rise to almost 100 per cent by 2015” (2011, p15). Wireless Intelligence reports that five billion of the world's seven billion people own a mobile phone (BBC, 2010). IT News Africa reports, “Africa has become the second most connected region in the world in terms of mobile subscription count... There were over 616 million mobile subscriptions in Africa at the end of September, 2011.” (2011) GSMA's *African Mobile Observatory 2011* shows that Africa now eclipses North America and Europe, and is second only to Asia in mobile subscriptions (2011, p8).

How Mobile Phones Work in the Developing World

Mobile phones in the developing world differ from contemporary American consumers' experiences with mobile phones in some fundamental ways. This section is a primer on how phones work in Africa, from an end-user's point of view. It is considered “common knowledge” in Africa, but may not be familiar to western readers.
Mobile phones in Africa are nearly all prepaid. According to the GSMA's African Mobile Observatory 2011, 96% of Africans use prepaid services (p9). A user purchases a handset for the full fair market value without signing any long-term contract or subsidy such as is common in the United States. All phones use GSM-based technology, similar to T-Mobile and AT&T.

A person may purchase a handset from a specific cellular carrier, but it is just as common for them to purchase an unlocked phone from a non-affiliated vendor. To use a specific handset with a particular cellular carrier, the user purchases a SIM card for a nominal fee (sometimes free, and always trivial). A SIM is a chip similar in size to a micro-SD card. It provides the unique ID and other information which allows a handset to operate on a specific network; the SIM may also provide other value-add functionality. The SIM is generally placed in a special slot inside the back of the phone underneath the battery. On some newer multiple-SIM phones, the second or third SIM may be inserted in slots similar to a micro-SD card.

Once a handset has a SIM for a specific vendor installed, it may access that mobile network. Prepaid credits, generally called vouchers, are used to place calls, text, or access the Internet. Vouchers take several physical forms, but by far the most common is the scratch-off card.

Adding credits to a handset is as simple as purchasing a voucher, scratching off the foil to reveal the unique voucher code, dialing a short number on the handset, and entering the code. Many preliterate and even pre-numerate (lacking basic math skills or the ability to tell prices in the marketplace) people have started using mobile phones. The voucher charging system has proven easy for even low-numerate people to learn. Notably, it is significantly easier than the similar voucher systems of prepaid plans in the United States.
Incoming calls are generally free. Calls between two phones on the same carrier are less expensive than calls between phones on rival networks. In the past, SMS texting has been cheaper than voice, although this is changing in some markets. All of these facts have important implications for African mobile use, elaborated on in later parts of this document.

Credits are transferable between handsets on the same provider network. This fungibility was quickly picked up on by informal businesses to transfer value over long distances (typically from a wage-earner in the city back to their family in a village).

Kenya's wildly successful MPESA ("M"obile + PESA, the Swahili for “money”) network and its newer copycats are an exploitation of the same basic principle. MPESA ties a financial account to a handset and allows easy transfer of funds between handsets. Funds may also be “cashed out” at numerous business locations. This has provided lower economic classes with practical and easy access to “banking” services for the first time. MPESA is significantly easier to use than its western counterparts.

Wireless Internet service is provided through 3G, similar to what is available in the United States, and through Edge, its slower predecessor, which is still widely deployed. 3G service is being rolled out aggressively, as detailed below, but Edge is ubiquitous. In either case, a SIM and prepaid credits are still required, although the process for transforming voucher credit into “Internet credit” (which goes by various names) is not standardized. 3G dongles which plug into a USB port and visually appear similar to a thumb drive are also becoming a popular system for laptops and even desktop computers to get Internet service.

The main limiting factor in Internet performance is not 3G or even Edge, but rather the degree to which various networks have oversold their broadband capacity; this means that Internet speeds can vary significantly between various times of the day, being slow in the evenings but much faster in the early morning.
**Ubiquitous Features**

The differences between East African countries are mostly a matter of degree, rather than of kind. Each of the countries is ahead in some areas and behind in others. Some significant differences in Chad will be pointed out where relevant. However, several features were universal throughout all of these countries, whether in urban environments or the most rural settings.

**Advertising**

In Africa, advertising for mobile phone carriers is everywhere. From billboards in the capital cities, advertising the latest smartphones at the highest speeds, to local soccer team t-shirts in rural settings, the carriers are conducting massive marketing campaigns, competing for market share. Most of the carriers have a simple bold color branding, and in some areas of East Africa, more than 50% of the buildings are painted in a carrier's color and feature a prominent logo. Buildings right next to each other often have competing carriers' branding. This is equally true in both rural and urban settings. Because the industry is still dynamic, some vendors have changed names and branding repeatedly in quick succession, as corporations are bought out or consolidate. This has led to many buildings which are advertising the color scheme of brands which no longer exist.

Chad has significantly less advertising in general, but most of it is for mobile phones and follows a similar pattern.

**Vouchers**

In Uganda, one vendor said that he makes 200 UGX ($0.08 USD) of profit off of every 5000 UGX ($1.92 USD) of vouchers he sells.

The carriers make their money primarily off of sales of airtime, via vouchers. So they have well-
developed networks of vendors selling vouchers. There is always a vendor available to sell additional airtime minutes anywhere in Africa, no matter how rural the setting. Virtually every store sells airtime for one or more carriers, but it is also commonplace to see informal street vendors doing a brisk business in vouchers.

Chad has logistical challenges in regular supply of ticket-vouchers, so it too has a well-developed network of vendors, but in rural settings they generally sell airtime by direct transfer of minutes from their account to the customer phone. Since it adds one more human into the process and increases the potential for miscommunication, this can be more accident-prone than using a scratch card.

“Beeping”

Incoming calls are free, so often someone who has little airtime credit, or is an employee of a business, or friends with someone wealthier, will “beep” them. This means they call and let the phone ring once, then hang up. The other person is supposed to immediately call them back, effectiveness reversing charges for the call. This is commonplace throughout the study area.

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Note: The mobile phone megatrend has moved so quickly that statistics and information more than a few years old are dated. Much relevant information of note is online.


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