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## Ethiopia's ancient script enters wireless age

November 11 2004 at 06:33PM

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By Anthony Mitchell

Addis Ababa - One of the world's ancient alphabets could flash on the screen of cellphones in the third most populous nation in Africa, easing communications for millions who can only read and write the Ethiopic script.

Ethiopian and United States-based scientists adapted the script, which dates back to the fourth century, for use in text messaging - known as short message service or SMS, the scientists said on Thursday.

"We are enabling one of humanity's oldest scripts to enter the wireless age," said Samuel Kinde, who proposed the research.

"There is a significant amount of interest from potential users as well as from chipset manufacturers," said Samuel, an engineering professor from the University of California in San Diego.

The Ethiopic script is used for Amharic - the national language of Ethiopia's 70 million people. Ethiopia is the only African nation with its own alphabet which is still widely used.

Ethiopic is the medium for Ethiopian literature and is still in use in the liturgy of the Ethiopian Orthodox Church, reported

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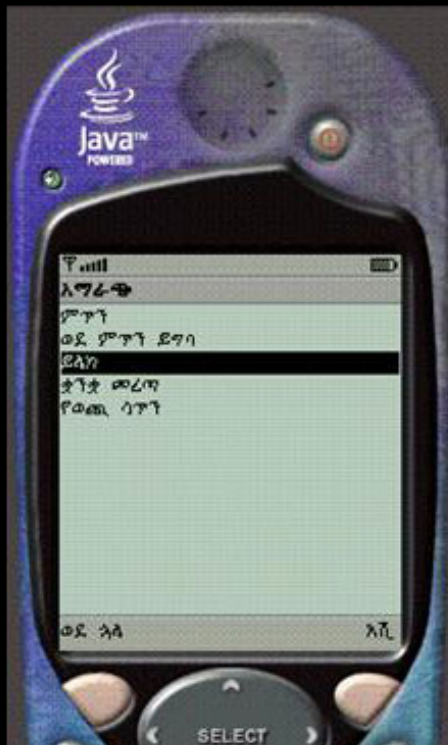
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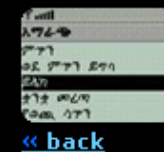
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Professors and research students in Addis Ababa developed two possible ways of mapping a limited set of 210 Ethiopic characters onto a mobile keypad, using a combination of keystrokes for each letter. They hope their work will open the door to text messaging in their country.

Photo: Courtesy of Addis Ababa University



A boy stands outside a mobile-phone shop in Addis Ababa, where Ethiopia's infrastructure minister, Kasu Yilala, recently called the country one of the least connected in the world. The state monopoly mobile-phone service provider, Ethiopian Telecommunications, is working to address the physical infrastructure shortfall.

Photo: Andrew Heavens



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## Progress in an Ancient Tongue

By [Andrew Heavens](#) | [Also](#) by this reporter

Page 1 of 1

02:00 AM Nov. 05, 2004 PT

ADDIS ABABA, Ethiopia -- For centuries, its letters have covered the pages of goatskin manuscripts, illuminated Bibles and the chronicles of ancient kings.

Now one of the world's oldest living alphabets could be about to make its debut on a mobile phone, if a group of Ethiopian academics gets its way.

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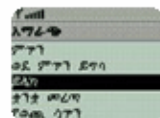
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Professors and research students here in the Ethiopian capital have just released a piece of groundbreaking research that they hope will open the door to SMS messaging in Ethiopic characters.

The earliest use of Ethiopic lettering has been traced to before the fourth century. Today the letters are shared by a range of languages spoken by millions of people across the Horn of Africa and hundreds of thousands of emigrants settled in the United States, Canada and parts of Europe.

The new report, catchily titled "Ethiopic Keyboard Mapping and Predictive Text Inputting Algorithm in a Wireless Environment," sets out to overcome some of the substantial technical obstacles to the alphabet's transition to the mobile age.

Its authors said they hoped it would also persuade mobile companies like Nokia that there is a viable market for mobile texting in Ethiopic.

"We think there is a great need for it," said Solomon Atnafu from Addis Ababa University's department of computer science, one of the key advisers on the project.



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## Ethiopia: Old Alphabet Adapted for Modern Use in Technology

### UN Integrated Regional Information Networks

November 11, 2004

Posted to the web November 11, 2004

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Addis Ababa

One of the world's oldest living alphabets could make its debut soon on mobile phones, Ethiopian scientists said on Thursday. In groundbreaking research, the ancient script of Ethiopic, which dates back to the fourth century, has been adapted so it can be used for SMS text messaging.

The scientists believe it will open up the digital age to millions of people in Ethiopia who cannot speak or write English, but use their own centuries-old alphabet.

Samuel Kinde, who proposed the research, said the breakthrough means rural farmers can access healthcare via text messaging, e-commerce and banking.

"We are enabling one of humanity's oldest scripts to enter the wireless age," he told IRIN. "Think of a rural coffee farmer who will be able to text yield and price information to dealers in the capital and elsewhere in real time."

The system could also be used by rural farmers to gain vital information like weather and harvest reports without the need of expensive computers.



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### Ancient Ethiopian alphabet debuts on SMS

Anthony Mitchell | Addis Ababa, Ethiopia

11 November 2004 14:47

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One of the world's ancient alphabets could flash on the screen of cellphones in the third-most-populous nation in Africa, easing communications for millions who can only read and write the Ethiopic script.

Ethiopian and United States-based scientists adapted the script, which dates back to the fourth century, for use in text messages, the scientists said on Thursday.

"We are enabling one of humanity's oldest scripts to enter the wireless age," said Samuel Kinde, who proposed the research.

"There is a significant amount of interest from potential users as well as from chipset manufacturers," said Samuel, an engineering professor from the University of California in San Diego.

The Ethiopic script is used for Amharic -- the national language of Ethiopia's 70-million people. Ethiopia is the only African nation with its own alphabet that is still widely used.

Ethiopic is the medium for Ethiopian literature and is still in use in the lituray

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# 3年毎にボーナスがもらえる 女性入院保険とは？

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コンピュータニュース - 11月9日(火)17時30分

## 太古から続くエチオピア文字を携帯電話で入力可能に

エチオピア、アディスアベバ発——十数世紀もの間、その文字は羊皮紙の写本や装飾を施した聖書、古代の王たちの年代記のページを飾ってきた。

現在も使われているものとしては世界で最古の部類に入るこのアルファベットが、新たに携帯電話用の文字として登場することになるかも知れない。現在、エチオピアの研究チームがこの目標に向けて努力を続けている。

同国の首都、アディスアベバの大学教授と研究生からなるチームは先ごろ、画期的な研究報告を発表した。エチオピア文字を使ったSMS(ショート・メッセージ・サービス)を実現させようというものだ。

エチオピア文字の起源は4世紀以前にまでさかのぼり、今日でも、この文字は「アフリカの角」[アフリカ北東部、エチオピアやソマリアのある地域で、インド洋に突き出た海岸線の形からそう呼ばれる]一帯に暮らす約数千万の人々、そして米国やカナダ、ヨーロッパの一部に移住した何万、何十万人々が話す一連の言語で共通に使用されている。

『エチオピア文字のワイヤレス環境におけるキーボードマッピングおよび予測型文字入力アルゴリズム』と、興味を引くタイトルのついた今回の[http://www.digitaladdis.com/sk/PTIE\\_Wireless.pdf](http://www.digitaladdis.com/sk/PTIE_Wireless.pdf) 研究論文(PDFファイル)は、このアルファベットがモバイル世界へ進出するのを妨げている、いくつかの重大な技術的障害を克服する方法を論じたものだ。

執筆者たちはまた、この論文を通じて、フィンランドのノキア社などの携帯電話機メーカーに対し、エチオピア文字によるモバイルメッセージ市場の将来性をアピールできればと考えている。

「ニーズは非常に高いと思う」と、このプロジェクトの主要アドバイザーの1人、アディスアベバ大学コンピューター科学部のソロモン・アトナフ助教授は話す。

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## Scientists find way to encode 345-letter Ethiopic script into SMS format

November 12, 2004

Addis Ababa, Ethiopia: One of the world's ancient alphabets could flash on the screen of cellphones in the third most populous nation in Africa, easing communications for millions who can only read and write the Ethiopic script.

Ethiopian and US-based scientists adapted the script, which dates back to the 4th century, for use in text messaging - known as short message service or SMS (which was only introduced in December), the scientists said yesterday.

"There is a significant amount of interest from potential users as well as from chipset manufacturers," said Samuel, an engineering professor from the University of California in San Diego.

The Ethiopic script is used for Amharic - Ethiopia's national language. The script, however, is incompatible with modern communication devices because of its ungainly 345-letter alphabet, compared with 26 letters in the Latin alphabet.

Scientists had to make the ancient alphabet fit the standard handset. They cut it down to 210 characters before mapping a base alphabet of 28 letters on to a handset - with users having to thumb in more keystrokes if they wanted the additional characters. - Sapa-AP

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*by Wireless Europe*

It has been reported that one of the world's oldest living alphabets could be about to make its debut on a mobile phone.

Apparently professors and research students in the Ethiopian capital have just released a piece of groundbreaking research that they hope will open the door to SMS messaging in Ethiopic characters.

The earliest use of Ethiopic lettering has been traced to before the fourth century. Today the letters are shared by a range of languages spoken by millions of people around the world.

A new report, titled "Ethiopic Keyboard Mapping and Predictive Text Inputting Algorithm in a Wireless Environment," sets out to overcome some of the substantial technical obstacles to the alphabet's transition to the mobile age.

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Samuel Kinde is one of the research scientists

### Ethiopia's ancient script enters wireless age

By Anthony Mitchell: Nov 11, 2004

Addis Ababa - One of the world's ancient alphabets could flash on the screen of cellphones in the third most populous nation in Africa, easing communications for millions who can only read and write the Ethiopic script. Ethiopian and United States-based scientists adapted the script, which dates back to the fourth century, for use in text messaging - known as short message service or SMS, the scientists said on Thursday. [Full Story](#)



Cameraman Mezgebe Desta (Houston, Texas)

**ERITREA: Diplomat says 25 killed in prison riot** (AFP: Nov 7, 2004)

### Asmara denies report of killings

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## Africans adapting technology to their own tongues

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In places like Kenya and Ethiopia, people are creating local-language keyboards and text message systems to facilitate technology usage

NY TIMES NEWS SERVICE , NAIROBI, KENYA

Sunday, Nov 14, 2004, Page 12

Swahili speakers wishing to use a *kompyuta* -- as computer is rendered in Swahili -- have been out of luck when it comes to communicating in their tongue. Computers, no matter how bulky their hard drives or sophisticated their software packages, have not yet mastered Swahili or hundreds of other indigenous African languages.

But that may soon change. Across the continent, linguists are working with experts in information technology to make computers more accessible to Africans who happen not to know English, French or the other major languages that have been programmed into the world's desktops.

Related research is under way in Ethiopia. Amharic, the official language, has 345 letters and letter variations, which has made developing a coherent keyboard difficult. Further complicating the project, the country also has its own system of time and its own calendar.

Still, computer experts at Addis Ababa University are making headway. Recently, they came up with a system that will allow Amharic speakers to send text messages.



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## ETHIOPIA: Old alphabet adapted for modern use in technology

[ This report does not necessarily reflect the views of the United Nations ]



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ADDIS ABABA, 11 Nov 2004 (IRIN) - One of the world's oldest living alphabets could make its debut soon on mobile phones, Ethiopian scientists said on Thursday. In groundbreaking research, the ancient script of Ethiopic, which dates back to the fourth century, has been adapted so it can be used for SMS text messaging.

The scientists believe it will open up the digital age to millions of people in Ethiopia who cannot speak or write English, but use their own centuries-old alphabet.

Samuel Kinde, who proposed the research, said the breakthrough means rural

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Ethiopian academics are trying to convince mobile phone manufacturers there is a demand for SMSing in the ancient script "Ethiopic", and have even released a paper (Ethiopic Keyboard Mapping and Predictive Text Inputting Algorithm in a Wireless Environment). There are a few obstacles to overcome based on the script have 345 letters and letter variations. In addition to working out how to express these on a 9-key pad, the technical limitations of the phone create a problem. "Most cell-phone manufacturers have a 64-KB memory limit (in some cases less) on the size of the wireless application file," states the report. "But most **Ethiopic** font files commonly used in desktop applications alone have sizes in the ranges of 175-250 KB."

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November 05, 2004

## Ancient Tongue SMS

Shibuya Epiphany

Posted by [Emily](#) at 05:42 AM

[Wired](#) reports that one of the world's oldest living alphabets could be about to make its debut on a mobile phone, if a group of Ethiopian academics gets its way.

*"Professors and research students here in the Ethiopian capital have just released a piece of groundbreaking research that they hope will open the door to SMS messaging in Ethiopic characters.*

*The earliest use of Ethiopic lettering has been traced to before the fourth century. Today the letters are shared by a range of languages spoken by millions of people across the Horn of Africa and hundreds of thousands of emigrants settled in the United States, Canada and parts of Europe.*

*The new report, catchily titled "Ethiopic Keyboard Mapping and Predictive Text Inputting Algorithm in a Wireless Environment," sets out to overcome some of*



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**Wish to SMS in Ge'ez?**

**Addis Fortune (Addis Ababa)**

**October 24, 2004**

Posted to the web October 26, 2004

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Ayenew Haileselassie

*Ethiopic Characters Make First Step into Mobile Technology*

Ge'ez evokes the ancient and the religious, the chanting of priests in long robes; parchment manuscripts and gold and silver crosses of the old days. The Ge'ez alphabet, also known as the Ethiopic writing system, has always been a source of pride for Ethiopians whose country happens to be the only African country with its own alphabet. Nonetheless it has been regarded as a drawback to the assimilation of information and communication technology with its ungainly 300 plus characters.

From the old typewriter to the new computer and the newer mobile phones, everything has worked with the 26 letters of the English alphabet, consisting of 10 times less characters than its Ge'ez counterpart.

Nothing is a debacle to imaginative souls. Ethiopia will not have to discard its literary tradition to embrace modern information technology.

Young Ethiopian researchers at the Addis Abeba University are making sure the numerous characters of the Ethiopic writing system are only a challenge to be overcome, not a hindrance to its slow but sure integration into the information era. Actually, they



NEWS REPORT

## Researchers close to putting Ethiopic characters on a mobile phone

Andrew Heavens  
Nov 7, 2004

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**ADDIS ABABA, Ethiopia -- For centuries, its letters have covered the pages of goatskin manuscripts, illuminated Bibles and the chronicles of ancient kings.**

Now one of the world's oldest living alphabets could be about to make its debut on a mobile phone, if a group of Ethiopian academics gets its way.

Professors and research students here in the Ethiopian capital have just released a piece of groundbreaking research that they hope will open the door to SMS messaging in Ethiopic characters.

The earliest use of Ethiopic lettering has been traced to before the fourth century. Today the letters are shared by a range of languages spoken by millions of people across the Horn of Africa and hundreds of thousands of emigrants settled in the United States, Canada and parts of Europe.

The new report, catchily titled "Ethiopic Keyboard Mapping and Predictive Text Inputting Algorithm in a Wireless Environment," sets out to overcome some of the substantial technical obstacles to the alphabet's transition to the mobile age.

Its authors said they hoped it would also persuade mobile companies like Nokia that there is a viable market for mobile texting in Ethiopic.

"We think there is a great need for it," said Solomon Atnafu from Addis Ababa University's department of computer science, one of the key advisers on the project.

"There are so many people in Ethiopia who cannot write English. A localized version of SMS would open up the technology to the whole population."

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NOVEMBER 05, 2004

## ANCIENT TONGUE SMS



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## Ethiopia's ancient alphabet could make a debut on SMS

Friday November 12th, 2004 00:07.

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By ANTHONY MITCHELL, Associated Press Writer

ADDIS ABABA, Ethiopia, Nov 11, 2004 (AP) -- One of the world's ancient alphabets could flash on the screen of cell phones in the third most populous nation in Africa, easing communications for millions who can only read and write the Ethiopic script.

Ethiopian and U.S.-based scientists adapted the script, which dates back to the 4th century, for use in text messaging -- known as short message service or SMS, the scientists said Thursday.

"We are enabling one of humanity's oldest scripts to enter the wireless age," said Samuel Kinde, who proposed the research.

"There is a significant amount of interest from potential users as well as from chipset manufacturers," said Samuel, an engineering professor from the University of California in San Diego.

The Ethiopic script is used for Amharic -- the national language of Ethiopia's 70 million people. Ethiopia is the only African nation with its own alphabet which is still widely used.

Ethiopic is the medium for Ethiopian literature and is still in use in the liturgy of the Ethiopian Orthodox Church, chanted by priests in incense-filled churches across the Horn of Africa nation.

The script, however, is incompatible with modern communication devices because of its ungainly 345-letter alphabet, compared with 26 letters in the Latin alphabet.

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Ghost Alphabets in the Desert of Connectivity

Submitted by [blogavillager](#) on Fri, 11/12/2004 - 06:09. [Africa](#) | [Babel and Barbarism](#) | [Constructed Languages](#)

### ወደ Centrelink ቈብ ሳይት እንኳን ደህና መጡ

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The story of a bunch of patriotic language geeks who devised a system for using the--actually, one of many--Ethiopic writing system(s) for short text messaging on mobile made [Wired News](#) and a fair number of blogs:

For centuries, its letters have covered the pages of goatskin manuscripts, illuminated Bibles and the chronicles of ancient kings.

Now one of the world's oldest living alphabets could be about to make its debut on a mobile phone, if a group of Ethiopian academics gets its way.

It's quite a Quixotic little project, given that Ethiopia had a teledensity (telephone lines per 100 population) of 0.36 in 2002—the lowest in Africa. About 30% of the population speaks Amharic, a language for which [some 200 different writing systems](#) exist. The reported adult literacy rate is about 40%, but there's some suspicion that figure may be inflated to reflect well on national literacy efforts by the government. ([Development statistics.](#))

So it's not as though the Horn of Africa can realistically be expected to leap from goatskin to the RIM Blackberry in a single bound, despite the authors' breathless declaration "the wireless revolution continues to make fast in-roads in telecommunication in developing countries such as Ethiopia."

The Ethiopian Telecom Corporation hired [Nokia](#) to install 40 million euros' worth of GSM infrastructure in August of this year. The nation has a per capita average annual income of \$28.54, compared to some \$35,000 in the U.S.

Sounds suspiciously like a money-laundering scheme to me.

Even so, the technical aspect of the problem is pretty interesting:

The Ethiopic writing system (EWS) — in the traditional non-Unicode environment — has 33 base characters with their 6 forms, which gives a total of 231 core symbols. It also has 7 special symbols, 44 labialized symbols, 8 punctuation marks and 20 numerals that raise the total number of characters to 310. In the latest Unicode version adopted (i.e., Unicode 3.0) 2, the 'extended' Ethiopic writing system has the range 1200-137F with 345 number of characters. In both the 'basic' and 'extended' EWS — therefore — the number of characters is considerably high making Ethiopic text composition on wireless devices a very challenging task. For wireless applications, two significant technical barriers arise due to the excessively large number of characters in the Ethiopic writing system. The first is that the number of keys available in the typical ITU-T keyboard is limited to 12 out of which only 9 are dedicated to characters. Mapping 345 characters to just only 9 keys is, then, a formidable task. The second technical barrier is that most cell phone manufacturers have a 64KB memory limit (in some cases less) on the size of the wireless application file 3. For example, for wireless applications written in Java, this limit suggests that size of the 'jar' file - including fonts - should not exceed 64 KB. Most Ethiopic font files commonly used in desk-top applications alone have sizes in the ranges of 175-250 KB 4,5.