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Potential of SMS for Health Applications in Developing Countries

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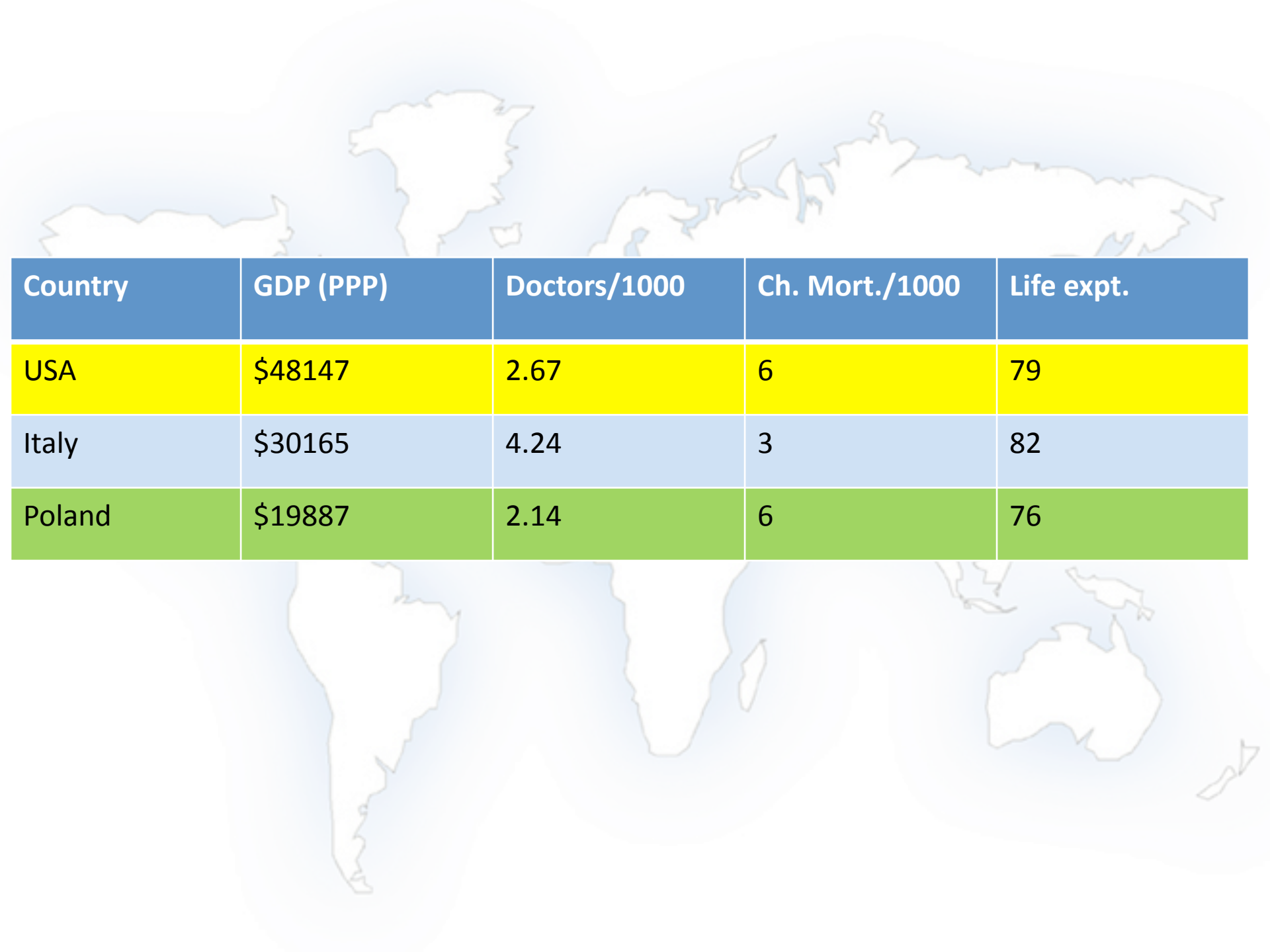
Interdisciplinary Telecommunications Program (ITP)

College of Engineering and Applied Science

Introduction

- Participant from 16 different countries
- mHealth is a term used for the practice of medicine and public health, supported by mobile devices
- In developed countries examples of mHealth:
 - monitoring
 - adherence
 - communication with health care provider
 - variety of health apps on smart phones (diet, fitness, lab tests, meds, symptoms)
- Main issues: diabetes, heart conditions, aged population
- Problems in developing countries are different: doctors located far away and scarce
- Main issues: HIV, malaria, malnutrition
- Why m in health? Why SMS?

Country	GDP (PPP)	Doctors/1000	Ch. Mort./1000	Life expectancy
Argentina	\$17376	3.15	10	77 years
Peru	\$10000	0.92	22	73 years
Columbia	\$9998	1.35	19	72 years
Ecuador	\$8317	1.5	20	76 years
El Salvador	\$7429	1.6	20	73 years
Nicaragua	\$3147	0.37	22	72 years
Jamaica	\$8727	0.85	14	73 years
Cameroon	\$2218	0.19	60	55 years
Gambia	\$2018	0.038	70	63 years
Tanzania	\$1689	0.008	66	53 years
Malawi	\$827	0.019	84	52 years
Congo	\$328	0.11	76	56 years
Ukraine	\$7077	3	8.5	69 years
Albania	\$7780	1.15	15	77 years
Philippines	\$4111	1.15	19	72 years
India	\$3703	0.59	46	76 years

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Country	GDP (PPP)	Doctors/1000	Ch. Mort./1000	Life expt.
USA	\$48147	2.67	6	79
Italy	\$30165	4.24	3	82
Poland	\$19887	2.14	6	76

Telecom infrastructure and popularity of different services

Latin American Countries and the Caribbean

- Infrastructure very good or excellent
- Mobile voice main form of communication but Internet catching up
- Mobile penetration 100% or more
- Texting still popular but not as much as before the rise of Internet
- Landlines falling behind as in developed countries
- SMS is cheap but mostly used by younger population
- Blackberry fashionable



African Countries

- Infrastructure decent and improving
- Mobile penetration around 50-80%
- Mobile voice and SMS have same usage
- Internet only in big cities and in infancy
- SMS not as popular as I expected given that it is cheap

Europe/Asia



- Differs greatly per country
- In Europe mobile penetration over 100%
- SMS not that popular because of pricing
- Mobile voice leads along with Internet in some countries (Ukraine)
- In India mobile voice dominates other services
- In Philippines SMS very popular
- Internet competition to texting and voice

Common characteristics around the world

- Most countries have competitive telecom markets
- Prices of SMS are lower than other services almost everywhere
- Government is involved in price regulation
- Internet still very expensive in majority of countries
- Only calling party pays for call/text
- Individuals not concerned about security and privacy of their personal info

Competition and pricing of SMS

- In Latin America – SMS cheap, and telecom industry competitive in most countries
- In Europe – mobile voice much cheaper than SMS, Ukraine and Albania both competitive
- In India and Philippines – in both SMS cheap but Philippines uses it more, both competitive
- In Africa – landlines are cheaper than SMS, most countries have competitive markets

mHealth potential

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- Only 4 of 16 countries already have mHealth projects, mostly pilots
- SMS has future in countries where the prices are low and texting unlimited
- Possibilities: health education, reminders by nurse or doctor sending SMS to patients
- Adherence and monitoring to treatment another possibility if SMS prices are sufficiently low

Obstacles to mHealth Differ

- In Latin America and Caribbean– mix of technology and people attitudes
- In Africa – cost, bandwidth, and need to educate public
- In Europe/Asia – politics and cost
- Everybody thinks mHealth is a distant future and that technology is not there yet (not true)
- Rarely if ever seen a medical application for a mobile phone

Conclusions

- Opportunities depend on location
- Pricing of SMS crucial for choosing appropriate applications, especially who pays
- Internet (chat) becoming alternative to SMS
- Unlimited texting is a key (Philippines)
- Compare mHealth with existing health care solutions and look at cost differences
- Lack of cost benefit analysis of improvements in public health



grazie
thank you
dziękuję

faleminderit
zikomo
asante

Дякую
hvala
albaraka

marami salamat po

merci beaucoup
gracias