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Item 3 (f) of the provisional agenda
Taxation and use of Mobile Technology

MOBILE TECHNOLOGY: THREATS AND OPPORTUNITIES FOR TAXATION AND GOVERNMENT PAYMENTS

Summary

The attached note has been prepared by Chris Williams (RTpay) and Jo Marie Griesgraber (New Rules) under the auspices of the Capacity Building Subcommittee and pursuant to a mandate given by the Committee at its seventh session, in 2011. The report of that annual session notes:[1]

> Following discussion, the Committee agreed to underta e a study on the issue of tax collection using mobile technology, to be presented at its next session. The issue of whether and what form of follow-up action should be ta en could be addressed by the Committee at that time.

The Committee further decided that:[2]

> report on taxation by electronic means would be presented by S TP and RTpay under the auspices of the Subcommittee on Capacity-Building to further consider paragraph of article 13, as recorded in the report of that annual session.

The report finds that customer protection on new payment methods is poor, with only around &$ A8 BDA6G5FE BDAH;6;@9 8G>> BDAF75F;A@ A8 5GEFA ? 7DEQ 8G@6E" 3@6 D3;E7s the estion o 57@FD3> 43@=EQ >35= A8 AH7DE;9:F A@ 8D3G6 3@6 E75GD;FK BDAF75F;A@ ;EEG7E#

The diversity of locating, registering and tracking citizens for the purpose of tax or benefits payment is well understood, and many countries including Nigeria and the Russian ederation have undertaken ambitious and expensive projects with the aim of issuing Tax dentification Numbers (TINs) to their tax paying population.

Understandably, there is some resistance among certain demographics in olntarily signing up for a scheme which is perceived as taking money away rom them, and yet many of these citizens are already part of an electronic network through their personal mobile phone, a network which they embrace with enthusiasm and in some cases at some sacrifice to other lifestyle choices.

n order to optimise the opportunities rom this global network , it is imperative to incentivise the registration process by offering and promoting positive benefits such as financial, health related or educational advantages or mobile users. Explicitly referring to tax collection ;EEG7E" AD ;@H;F;@9 EG4E5D;47DE FA 3BB>K 8AD 3 P23J +67@F;FK . G ? 47DQ" I ;>> 47 5AG@F7D productive in terms of consumer taxpayer, whereas offering the kinds of marketing incentives

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Global penetration of mobile technology

t the end o 2011, there were billion mobile s bscriptions, estimates *nt nationa o nication nion* [2]. That is e i alent to 8 o the orld pop lation. nd is a h ge increase rom billion in 20 0 and billion mobile s bscriptions in 200 .

Mobile s bscribers in the de eloped orld ha e reached sat ration point ith at least one cell phone s bscription per person. This means mar et gro th is being dri en by demand in the de eloping orld, led by rapid mobile adoption in China and ndia, the orld s most pop lo s nations.

t the end o 2011 there were billion mobile s bscriptions in the de eloping orld (o global s bscriptions). Mobile penetration in the de eloping orld has reached , ith rica being the lo est region orldide at 3 .

o tio a [3] predicts that mobile s bscribers orldide ill reach billion by the end o 2012, billion by the end o 2013 and 8 billion by the end o 201 .

0ADF;A D7E73D5: 7EF;?3F7E F:3 'E;3 035;3;5QE E:3D7 A8 F:7 ?A4;>7 EG4E5D;47DE I;» D;E7 rom 0. in 2011 to . in 201 . y 201 rica and Middle East ill o erta e E rope as the second largest region or mobile s bscribers rica.

Ericsson (J ne 2012) belie es global mobile penetration reached 8 in 2012 and mobile s bscriptions no total aro nd .2 billion. o e er, the act al n mber o s bscribers is aro nd .2 billion, since many people ha e se eral s bscriptions. Ericsson orecasts that mobile s bscriptions ill reach billion in 201 , o hich billion ill be mobile broadband connections.

Key Global Telecom Indicators for the World Telecommunication Service Sector in 2011 (all figures are estimates)

	Global	Developed nations	Developing nations	Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas
Mobile cellular subscriptions (millions)	, 81	1, 1	, 20	33	3	2,8	3	1	
Per 100 people	8 .	11 .8	8.8	3.0	.	3.	3.0	11 .	103.3
Fixed telephone lines (millions)	1,1			12	3	11		2 2	2 8
Per 100 people	1 .	3 .8	11.	1.	.	13.0	2 .3	3 .1	28.

Active mobile broadband subscriptions (millions)	1,186	701	484	31	48	421	42	336	286
Per 100 people	17.0%	56.5%	8.5%	3.8%	13.3%	10.7%	14.9%	54.1%	30.5%
Fixed broadband subscriptions (millions)	591	319	272	1	8	243	27	160	145
per 100 people	8.5%	25.7%	4.8%	0.2%	2.2%	6.2%	9.6%	25.8%	15.5%

response to a local ood and li elihoods crisis. The as e regional go ernment has de eloped a mobile application that enables the collection o ees remotely on ace to ace ser ices (e.g. tra ic ines, taxes and c stoms d ties), integrated ith the payment gate ay or e go ernment ser ices.

Countering fraud

1. is s from technology attac s and mal are

The ncenti es and opport nities to challenge Mobile Phone ased Payments ystems (MP P) sec rity are n mero s. The rapid de elopment o ne systems means that apps are r shed to mar et ith ins ic ent testing, chip designs are o ten la ed and lnerable, phones ship ith ittle inb lt protection, and sensiti e personal data is increasingly stored ithin the chip or handset itho t s ic ent protection.

Mobile de ices are no in many ays as sophisticated as des top or laptop comp ters, yet many ship itho t anti ir s or spy are protection, and e sers bother to install these sec rity app ications.

Estimates or gro th o mobile mal are (in des ir ses, orms and malicio s so t are sed by hac ers, s ch as code inserted into compromised mobile apps) ary greatly, b t all experts arn that it is gro ing ery ast. IG arc identi ied a staggering 2, 00 di erent types o mobile mal are in 2010 .

ccording to Canalys (October 2011)[8], only o smartphones and tablet comp ters shipped in 2010 had some orm o mobile sec rity do nloaded and installed. J niper Research (g st 2011) o nd that less than 1 in 20 smartphones and tablets ha e third party sec rity so t are installed in them.[10]

These are some o the identi ied points o lnerability

l an

held within the handset open the possibility o identity the t as well as nds misappropriation.

o ni ation ann M mobile phone handsets are designed to comm ni cate o er a n mber o di erent channels, incl ding 2G / 3G / G mobile phone signals, l etooth, ireless N and, ncreasingly in the orld o MP P , N C (Near ield) A ? ? G@;53F;A@! I ;5: 7@34 7E B: A@7E FA 47 GE76 8AD B3K ? 7@F A@ 3 PE I ;B7 3@6 9AQ 43E;E# Each o these signals is lnerable to interception by other e ipment.

i ation M mal are, spy are, phishing programs and ir ses can be installed ia a n mber o deli ery ectors incl ding do nloaded apps, pd s, email messages and (te o e)

. *o ation t a in an ot i* M applications which can trac the location o stolen or lost handsets and can a tomatically wipe all data content i re ired. These

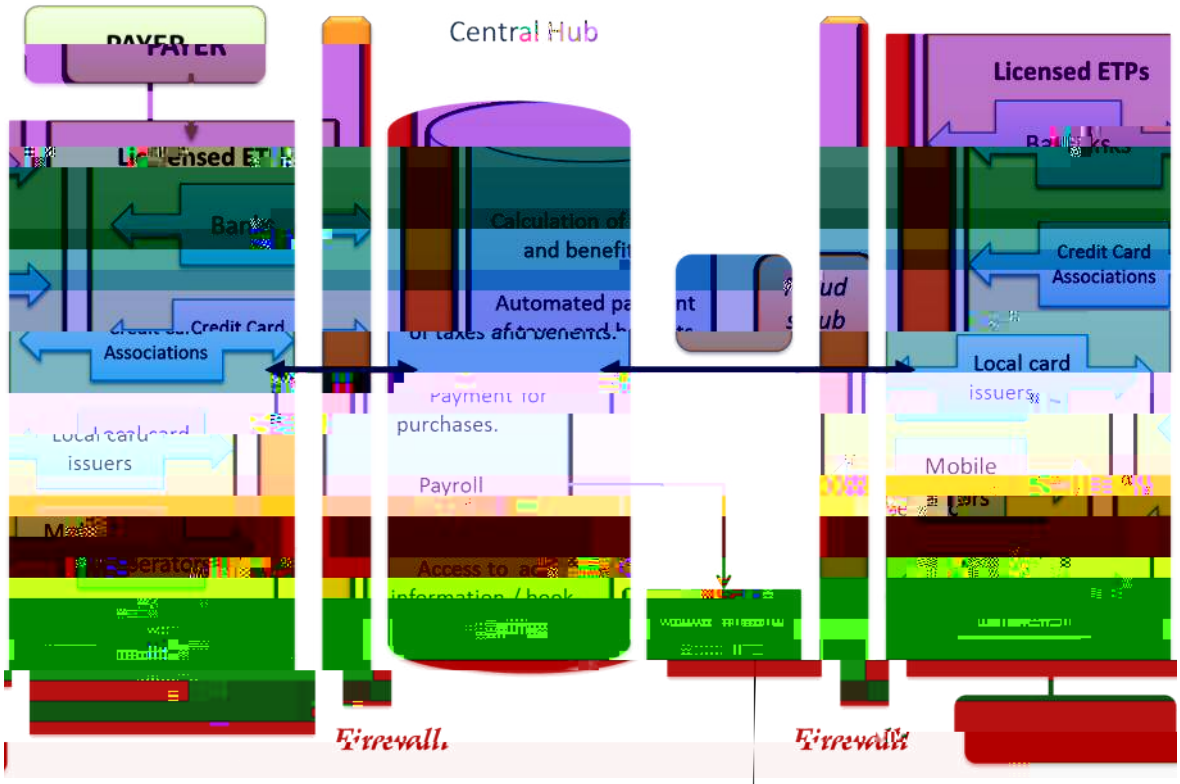
Potential solution scenario

n order to achie e e icient and a ditable trac ing o and inter ention in electronic transactions, all electronic payments, rom whate er so rce, sho ld be ro ted thro gh a single central national h b, which will accept data rom all licensed Electronic Transaction Pro iders (ETPs) in a p blished ormat ia a sec re ire wall.

i erent aspects o the mod lar system may be pro ided by di erent commercial entities, data comm nications pro iders and transaction ser ice systems, at both local and international le el. t is the interoperable interconnection o these systems which pro ides the re ired o tcome that const t tes the system based sol tion.

The technology can be based aro nd standards and systems in widespread se in the credit card and transaction processing ind stries, with speci ic mod les to handle the di ering D7CG;D7 ? 7@FE A8 ;@6;H;6G3> 5AG@ED;7EQ >79;E>3F;A@ 3@6 D79G>3F;A@E ;@5>G6;@9 ;@F7D@3F;A@3>" national and regional tax la w, data protection, pri acy legislation, r les go erning inancial transactions and the r nning o inancial ser ices operations.

The central calc lation mod le sho ld be go erned by an nderlying r lebase conta ning con ig rable data on tax rates, categories o goods and ser ices, reg lations on allo wances and rebates and other rele ant data or each application.



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The single Central b may license speci ic elements o nctionality to other sec re h bs (s ch as card associations) or operational p rposes, hile retaining a consistent role as the single ra d analysis and nti Money a ndering (M) centre. The ali ication or additional sec re h bs o ld be applied extreme y rigoro sly, partic larly or pro iders o ne electronic payment types s ch as mobile phone and social media payments.

nteroperability among di erent types and pro iders o electronic payments is a ey eat re o the system.

The components o the system can be bro en do n as ollo s

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n essence, the central h b system o ld act in the same ay as a credit card central h b, it recei es data rom a ariety o electronic so rces, processes the data, ma es a calc lation, processes a ded ction or credit, then processes payments o the net al e to the payee and any additional payments to other sta eholders, s ch as the tax a thority or ser ice pro iders (payment ser ice pro iders, ETPs, central h b pro ider etc.).

Tax collection and benefits payments

Benefits and government subsidies

By creating a single central hub system through which all electronic transactions flow, not only those from MPESA but also from other electronic formats such as credit and debit cards and bank transfers, it is possible to create an efficient and effective channel for funds between government and citizens. But it is also important to establish positive reasons and incentives for the use of such systems on a personal level, above and beyond the general benefits to society.

One way in which positive advantages can be demonstrated is in the payment of government benefits, discounts and rebates, particularly for those who do not have bank accounts. In addition to direct benefits payments, the central server system can intervene to provide targeted aid to particular groups in a discrete and confidential manner.

For example, a benefits recipient could pay a merchant using a mobile phone payment which passes through the central server, the merchant would receive full retail price for the purchase into his electronic account, but the 5GEFA?7DQE 355AG@F IAG>6 47 674;F76 I;F: A@>K %$ A8F:7 retail cost, with the rest paid by direct subsidy from a government account. In this way, the subsidy can be paid without imposing the stigma of goods vouchers or other publicly visible interventions.

Payroll Taxes

In encouraging a move away from cash payments and towards a cashless, electronic environment in which the movement of funds can be tracked and audited, a critical first stage is in the payment of wages and salaries to employees, and the collection of payroll taxes in an efficient, trustworthy and consistent environment.

In the proposed system, all electronic salary payments would be routed through a central server. Payment of the gross salary due to each employee is made by the employer to the central server system as a single gross amount each pay period, all due taxes and benefits are then calculated and extracted, using an underlying rulebase 3@6 67F3;>E A8 735: 7?B>AK77QE individual circumstances. Any benefits or allowances are also added and the net amount is then paid to the employee.

In this way, the administrative burden of tax calculation and collection is taken away from the employer, and the risk of erroneous or ra d lent calculations is greatly reduced. In addition, any change in tax rates or allowances can be implemented centrally by the tax authority in a

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VAT and sales tax collection

n a similar manner, the central h b co ld easily control the separation o the , T or ales Tax component rom the gross amo nt paid on transactions processed thro gh the central system so that the seller or ser ice pro ider recei es only the net amo nt d e on the

Benefits of a central server-based system

or the tax a thority

1. , T collection has been di ic lt and npop lar. This system ma es it a tomatic, simple to operate and gi es a high al e o data or all tax reporting and analysis.
2. The operation o real time ra d analysis will red ce losses dramatically in all areas o tax collection.
3. nter ace with local tax a thorities will be greatly impro ed, as their taxes can also be collected in real time.

or retailers

1. cost e ecti e way o collecting sales proceeds, and paying the necessary taxes, with little reporting e ort.
2. acility to mar et goods more e ecti ely with promotions and re ent ser disco nts, gi ing the bene its a tomatically at the time o sale.
3. , T re nds are similarly a tomatic, reco ered on the same day as p rchases are made.

or large employers

1. ' ? 3<AD E3H;@9 ;@ 36 ? ;@;EFD3F;A@ A8 7 ? B>AK77EQ F3J 3@6 47@78;FE D75AD6E#
2. acility to bill c stomers to their asi ban acco nt or collection o reg lar bills.
3. tomated , T collection and re nding or all transactions.

or telcos

1. ar greater tra ic o er net or s as more and more transactions become electronic.
2. licenses to operate their part o the central clearing are gi en, they can generate an extra income stream.
3. n ability to incorporate ar more in ormation acilities o er mobile phones in all areas o b siness, ed cation and s pport ser ices.

or go ernment

1. ma or increase in tax re en e.
2. capability to pro ide bene its to needy citi ens in a sec re and riendly manner, o er the phone net or s.
3.

Wider socio-political considerations

The recent global debt crisis is an issue that cannot be ignored. There are a number of key areas in which effective measures can be implemented to limit negative impacts.

These include

- Greatly reducing tax evasion
- Modernising payment methods in a secure manner
- Closing the use of tax havens or tax avoidance
- Create central data servers to manage benefits, healthcare, taxes
- Support micro businesses to reduce unemployment
- Discourage cash as a payment method
- Enable mobile phones to act as a primary communication route

We have seen that the ability of telcos to spread their towers across virtually all areas of the world is remarkable. They have proven this can be commercially achieved, even in most of

The goal of a cash-lite society

Cash is expensive, hard to track and frequently used in transactions that are illegal, unsanctioned or aimed at evading tax payment. In promoting a fairer and more efficient government payments system it is important to discourage the use of cash and promote the benefits and advantages of electronic payments.

Some governments have already recognised the potential benefits of reducing the use of cash, with incentives for electronic payments and penalties or disincentives for cash usage. These ;@5>G67 ;@;F;3F;H7E EG5: 3E F:7 P53E:>7EE ,39AEQ B;>AF ;@ .;97D;3 3@6 3 ?AD7 3?4;F;AGE initiative in Eskisehir, Turkey - 3@6 2GD=7KQE 7JBD7EE76 ;@F7@F;A@ FA IAD=FA I3D6E 3 53E:>7EE society by 2023.[14]

The huge growth in MPBPS can help to work towards the goal of a connected, coherent and accountable cashless system M but only if the commercial providers can be managed effectively, the transactions tracked and audited centrally, and consumers and citizens provided with incentives and benefits to ensure that using electronic payments is fairer, more secure and more advantageous than using cash.

Building a feeling of trust

Any time a government is perceived to impose a central system on its citizens there can be a sense of distrust and anxiety about the loss of independence and personal rights. It will be @757EE3DK FA 7@EGD7 3@ 78875F;H7 P:73DFE 3@6 ?;@6EQ 53?B3;9@ 366D7EE7E 5;F;L7@ 5A@57D@E 3@6 emphasises the benefits over any perceived threats to personal freedom.

One example of how public acceptance may be gained would be to take lessons from a number of national lottery schemes around the world, in which derived financial benefits are shown to be applied directly to worthwhile projects and good causes. The financing of the 2012 London Olympics from this source has been popular and successful. Incentives that include inclusion of those who make cashless payments into a free national draw or lottery have already been shown to encourage participation.

The initial public presentation of government-mediated electronic payment systems has to emphasise the advantages to the individual citizen, whether presented as the opportunity to win prize money or other material benefits, access to government services or investment opportunities. The underlying aim of the programme is to increase overall tax income; but this can also be shown to be a direct benefit to the honest citizen. T e si ni icant decrease in tax evasion and t e restriction o avoidance b t e ealt s ould be seen as a a to lo er t e overall tax paid b t e onest citi en and increase t e airness o t e s stem to all

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Controls on mobile network operators (MNOs)

The mobile phone is clearly the primary contact point or billions o indi id als. y creating a programme in hich iti ens are incenti i ed rather than orced to se their mobile phone or cashless p rchases, e can create a system or inancial transactions that is cost e ecti e

3@6 FA 7H7DKA@7QE 47@78;F#

n order to b ild an e ecti e system that prod ces consistent, sec re and iable sol tions globally, it is critical to address the relationship bet een go ernment controls and the ario s commercial interests, most notably the telcos, m payments pro iders and Mobile Net or Operators (MNOs). C rrent national approaches are piecemeal, ith di erent sol tions being tried in di erent territories and go ernments attempting to learn rom experiences here mista es ha e been made M or example, ith the implementation o M PE in enya here arg ably the m payments operator has been granted too m ch reedom, ith the res lt that other go ernments ha e reacted by o er reg lating.

deally a standard or the operation o m payments and m ban ing sho ld be reg lated as part o an international agreement. Central an s are delegated the tas o reg lating the inancial acti ity o MNOs, the system can be as sec re as any ban ing net or sol tions contin e to be implemented on a co ntry by co ntry or case by case basis, the hole program r ns the ris o ailing d e to ra d and systemic or tmpleg, mosy (s o (i(o a) s.) a competiti e antage in bre i(o in) 11(g)10(ne)¯ ( ) (gr)3(o nd a) (nd e)¯ (stabli) 2(shing)

Action points

The mo ement to ards mobile phone based connecti ity, and the conse ent rise in inancial transactions operated thro gh this technology, is happening at a rapid rate. t is as i a hole ne orld is being in ented, here e ind di erent species e ery day. This is not st a inancial change, the ay e manage healthcare, schooling, in estment etc. all change as ell.

Go ernment, in all orms, stand to gain signi icantly rom these de elopments M b t the danger is that inaction permits the per ei ed dangers to o er helm the potential bene its.

Under the scenario described, Central an s ha e the greatest d ty o managing the data and inancial lo s, b t tax a thor ties also ha e a ma or role. Each go ernment ta es the ltimate responsibility to manage its o n internal circ mstances, b t there are many areas here the iss es are ni ersal or ha e conse ences across national bo ndaries. n this context, bodies s ch as the United Nations ha e a great opport nity to assist go ernments globally by ens ring a sharing o no ledge and technology assets.

Recommendations for next steps

n ie o the rapid de elopments in both mobile technology and the applications o inancial transaction ser ices carried by these net or s in a ide range o co ntries, the iss e o co ordination and reg lat on is both critical and rgent.

t is recommended that rther st dies be established on the iss es o management and reg lation associated ith m payments, m ban ing and m retail applications.

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The objectives would be to deliver agreed recommendations and models for governments to benefit from the experience of others, and to test and report on new technology options. The transfer of knowledge on the establishment of central server controls, regulation of the flow of electronic funds and rapid analysis can reduce administrative costs for each government and maximise revenues.

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