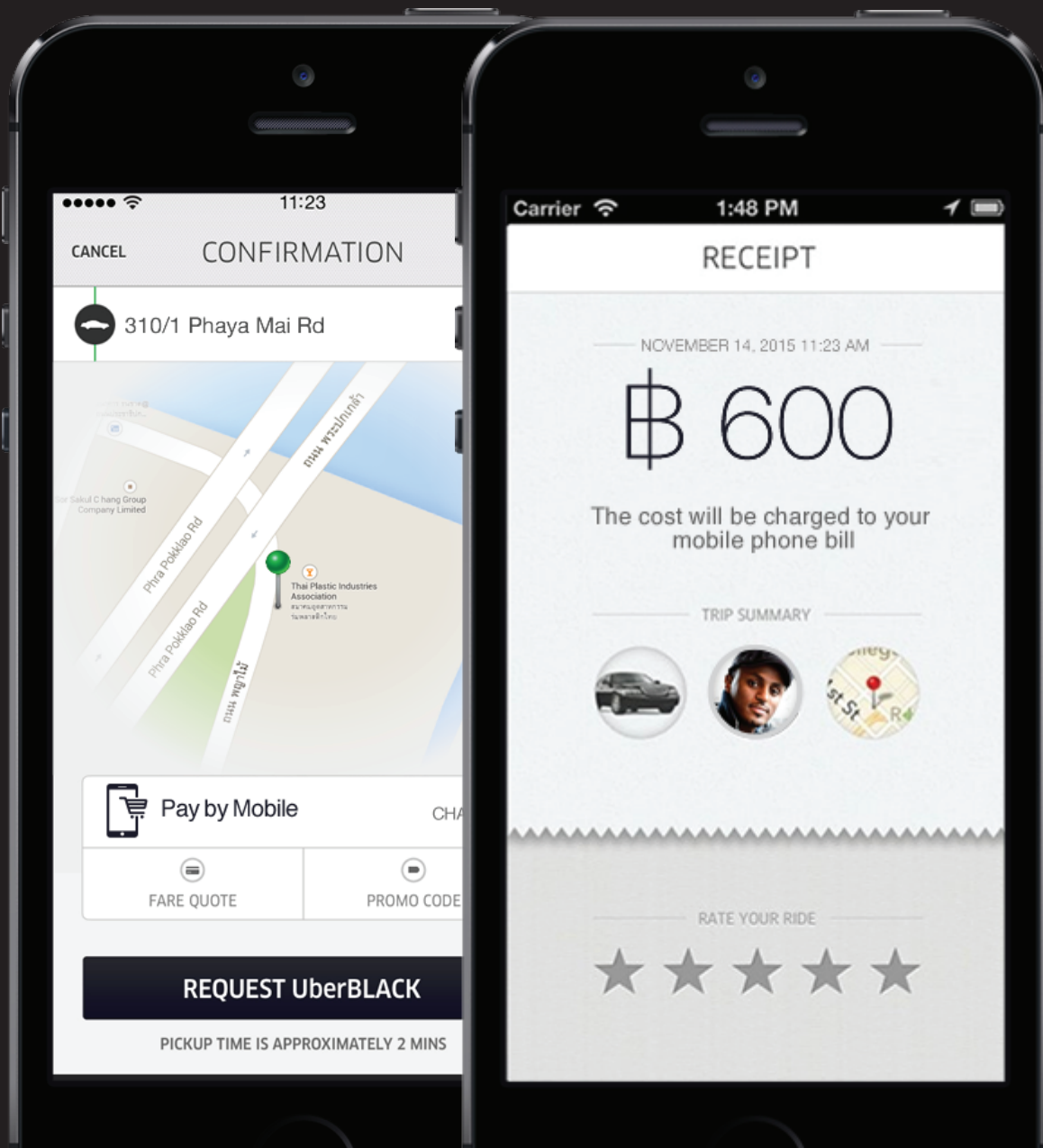




THE FUTURE OF CARRIER BILLING:

How mobile operators can replace credit cards
in emerging markets



Payments are the most under-utilized revenue source for the global telecommunications industry.

The global telecom industry generated **\$1.13 trillion** in revenue during 2013. Carrier billing accounted for an estimated 0.02% (**\$3 billion**) of this revenue. This means the average unique mobile subscriber brought in less than \$1 to the mobile operator.

The potential for carrier billing is tremendously bigger. Imagine a situation where every phone owner in the world who doesn't have a credit card would instead use their phone bill to make payments. Right now there are approximately 2.7 billion people like this in the world. What would then happen if a company like Uber would start accepting carrier billing in parallel with credit cards?

Uber is just one company who would use carrier billing to collect payments from their cardless users. We estimate that carrier billing could bring in \$1 trillion in additional revenue to mobile operators - as much as the **current entire telecommunications industry** combined.

How? The existing m-commerce market is estimated to reach **\$3.2 trillion by 2017**. This revenue is generated purely from credit cards available to only a quarter of the world's population. Most unbanked users are located in emerging markets so we can assume a 9x lower income for users of carrier billing compared to credit cards.

Therefore, if 2.7 billion unbanked mobile users spent 9 times less than credit card owners through carrier billing, the number easily adds up to \$1 trillion (existing m-commerce market of \$3.2 trillion, multiplied by 3x higher carrier billing coverage, divided by 9x lower income).*

Carrier billing provides a very real alternative to credit cards in emerging markets as issues preventing spread of credit cards (identity and reputation management, debt enforcement, informal economy) are entrenched and not getting solved anytime soon. Mobile operators have the chance to seize this opportunity and turn carrier billing into the de-facto payment method for online payments in emerging markets.

The opportunity to capture this market will only become available to mobile operators who are able to go through renewal in their carrier billing infrastructure and commercial strategy.

* - M-commerce in this case would cover physical services e.g. plane tickets or hotel bookings; using carrier billing for the sale of large physical items in the near future is unfeasible.

U B E R

What impact does direct carrier billing have on carriers? Example of Uber.

Lets assume the ridesharing company Uber were to launch in Bangkok, Thailand. Thailand has just **5% credit card penetration** so it would not make sense for Uber to use credit card billing here. What if they instead used carrier billing - a logical step as almost every person in Bangkok has a mobile phone.

Uber generated \$26 million in revenue from New York during December 2013 - or approximately \$312 million in annual revenue. New York is a city roughly of the same size as Bangkok while the income in Bangkok is 9 times lower. Even with lower income, Uber would be able to generate an estimated \$35 million in annual revenue from the city thanks through the widespread reach of carrier billing.

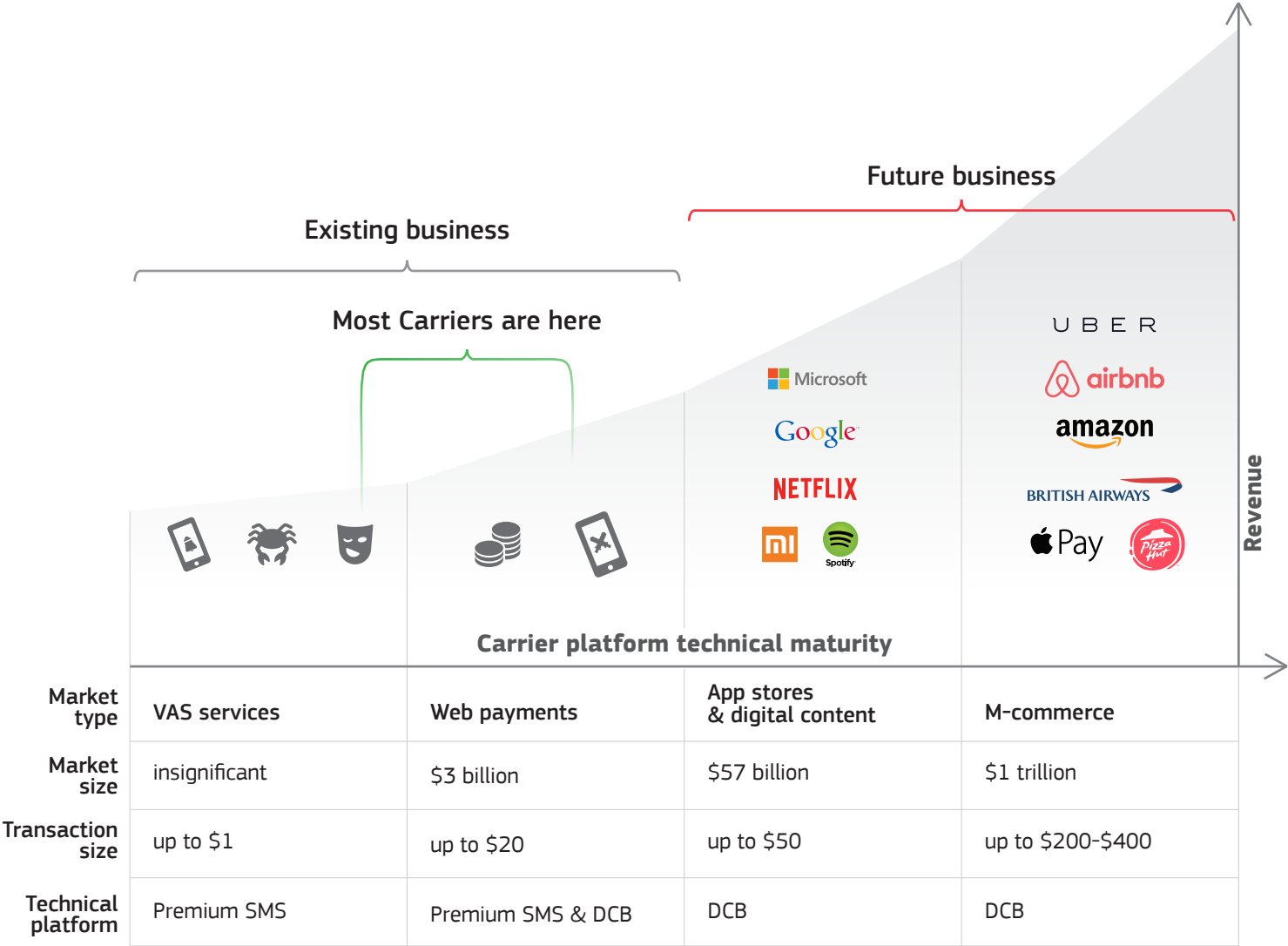
Distributed among the 4 mobile operators, this would mean annual additional revenue of \$8.75 million or \$1.05 per Bangkok citizen per year. **One single major merchant using carrier billing would double the carrier billing revenue of an average mobile operator.**



Where are we now?

The existing digital content market is estimated to currently stand at **\$57 billion**. Some mobile operators have already entered this market (Google is using carrier billing in **32 markets**; Microsoft in **45 markets**). But app stores like those operated by Google or Microsoft (which need to provide the standard 70% payout to developers) and digital content merchants like Spotify or Netflix (who have fixed licensing costs attached to their service) are only willing to work with mobile operators who provide competitive commercial terms on par with credit card billing.

The carrier billing infrastructure and commercial strategy of most mobile operators is not ready to support onboarding of such merchants. Current carrier billing commercials are based on an outdated Value Added Services business which was never intended to be used for large-scale billing. The past and future of carrier billing can be summarized as follows:



In order to work with app stores, digital content and m-commerce merchants, carriers need to leave behind the existing low-volume business and upgrade to **direct carrier billing**.

How to get carrier billing to \$1 trillion?

Upgrading to direct carrier billing requires two major changes from the carrier side: improved commercial terms for merchants and improved technical infrastructure.

Carrier billing has historically had low payouts as such payouts were acceptable to Premium SMS based Value Added Services merchants. For the “future business” merchants who are looking to leverage carrier billing such commercial terms are not acceptable. These market segments can only be unlocked once a certain minimum payout threshold - 85% - has been achieved. From the mobile operator perspective, giving better payouts to merchants does not reduce revenue, on the contrary:

	75% payout	85% payout	90-95% payout
Market type	Premium SMS & web payments	App stores, digital content	M-commerce
End-user spend	\$3 billion	\$57 billion	\$1 trillion
Merchants' revenue	\$2.25 billion	\$48.45 billion	\$900-950 billion
Mobile operators' revenue	\$0.75 billion	\$8.55 billion	\$50-100 billion

Much like existing commercial terms are not applicable to the new segments, existing Premium SMS technology can not be applied by them either. The Premium SMS technology has significant constraints, including fixed pricing, user-side manual input which causes billing failures etc. With direct carrier billing these problems can be solved if the following technical capability is provided by the mobile operator:

Technical capability	Reasoning
Purely API based integration between merchant and mobile operator	Increases amount of merchants able to integrate carrier billing; reduces integration time and complexity
Dynamic pricing	Enables merchants to transfer their existing business model to carrier billing
Self-service setup	Reduces time-to-market and increases amount of merchants able to integrate carrier billing
Ability for the merchant to get the user's mobile number from via any mobile data connection	Improves end-user payment experience and increases revenue for merchants thanks to higher payment conversion
Subscription payments support (including event based subscription, i.e. the merchant can trigger a repeat purchase any time without additional user input).	Enables merchants (e.g. digital content) to transfer their existing business model to carrier billing
No significant limitations on service types that can be launched on specific connections (e.g. web, mobile web and native inapp services can be used and included in integration).	Reduces integration time and complexity, reduces time-to-market and increases amount of merchants able to integrate carrier billing

Additional features: Taxation model support; 2-step charging capability; Refund capabilities; Operator lookup capabilities; Messaging API for confirmations and receipts

Major merchants like Google, Microsoft and Spotify have already warmed up to the idea of using carrier billing as a replacement to credit card billing in emerging markets. The expectation is now for carriers to meet halfway and unlock payments for their end-users, seize the \$1 trillion opportunity for themselves and enable merchants to grow their business in underbanked markets.





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