

PLENARY #2

Is there an ideal parking payment technology?

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Outline

- Quick overview of meter technologies (SS, MS, PBP, in-vehicle?)
- Overview of experience in each jurisdiction
- Pros/cons based on perspective of different stakeholders
 - Implementation, operations, maintenance personnel (Meter Shop)
 - Parking control officers (PCOs)
 - The public
 - Customer service, hearings, adjudication
 - Accounting/Finance
 - Cash collectors
 - Security personnel
 - Policymakers & data analysts
- Lessons learned
- Opportunities for improvement
- Summary, conclusions, closing remarks

Single-space meters



Multi-space meters (pay-by-space)



Pay-by-phone



Register

country
Canada/US - 1

mobile number
604-123-4567

choose a numeric PIN
••••

credit card #
4510 1234 5678 1234

card expiration
12 31

accept [terms and conditions?](#)

next

Input info

[1234]town hall garage

space #
56789

select vehicle
KMS 789 edit vehicles

duration
90 minutes

next

Confirm

location
[1234] town hall garage

space #
56789

vehicle
KMS 789

cost
\$3.00

parking expiration
2:30 PM

confirm & charge parking

Summary of characteristics 1

TECH	Payment Types	Components & Features	Related Infrastructure
SS	<ul style="list-style-type: none"> Coin <u>Parking card</u> <u>Credit card</u> 	<ul style="list-style-type: none"> RFID tag Meter mechanism Dome (<u>Solar panel</u>) (<u>Batteries</u>) (Displays and touchpad) 	<ul style="list-style-type: none"> Locks Striped parking spaces Stickers Poles & brackets Housings and vaults Coin canisters Signage (restrictions)
MS	<ul style="list-style-type: none"> Coin <u>Parking card</u> <u>Credit card</u> 	<ul style="list-style-type: none"> Pay station Cashboxes (<u>Solar panel</u>) (<u>Batteries</u>) (Displays and touchpad) 	<ul style="list-style-type: none"> Locks Striped parking spaces* Stickers Curb numbers* Signage (restrictions) Meter-specific signage Bicycle parking†
PBP	<ul style="list-style-type: none"> Credit card only 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Stickers and/or Signage

* If using pay-by-space technology (not needed for pay-and-display)

† To account for loss of informal bicycle parking supply when replacing single-space with multi-space meters

Summary of characteristics 2

TECH	Revenue Collection	MMS/LMS	Enforcement	Programming via XML	Live XML data feed
SS	<ul style="list-style-type: none"> • Canister • Coin vault • Merchant account 	<ul style="list-style-type: none"> • <u>Web-based</u> • <u>Remotely configurable</u> 	<ul style="list-style-type: none"> • <u>Visual</u> • (Screen and LED) 	<ul style="list-style-type: none"> • <u>Yes</u> 	<ul style="list-style-type: none"> • <u>Yes</u>
MS	<ul style="list-style-type: none"> • Cashbox • Merchant account 	<ul style="list-style-type: none"> • <u>Web-based</u> • <u>Remotely configurable</u> 	<ul style="list-style-type: none"> • <u>Visual</u> • (Screen & flipdots) 	<ul style="list-style-type: none"> • <u>Yes</u> 	<ul style="list-style-type: none"> • <u>Yes</u>
PBP	<ul style="list-style-type: none"> • Merchant account 	<ul style="list-style-type: none"> • Web-based • Remotely configurable 	<ul style="list-style-type: none"> • Visual (Screen)** • Hand-held device 	<ul style="list-style-type: none"> • Yes 	<ul style="list-style-type: none"> • Yes

** Where combined with wireless meters

San Francisco's experience - current

Single-space	Qty.	Percent	in SFpark
MacKay	19,000	70%	
IPS (new)	5,600	21%	5,200 (19%)
Subtotal	24,600	90%	

Multi-space (pay-by-space)

Duncan RSV	1,900	7%	
Duncan VM (new)	800	3%	almost 800 (3%)
Subtotal	2,700	10%	

Total	27,300		6,000 (22%)
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Pay-by-phone (currently under implementation)

SFMTA metered spaces + 1,000 metered spaces under Port jurisdiction = 28,300

San Francisco's experience

- Now, can:
 - Make global changes remotely
 - Not worry about daylight savings time
 - Have faults reported
 - Receive data in real time
- Challenges that remain:
 - Batteries
 - Ability to split the day into more time periods (and display same)
 - Still need to improve user interface
 - Coordination of data and updates
 - More flexibility to MMS
 - Ability to conduct changes in batches of spaces
 - Faults that the meter doesn't know about
- Good news: vendors will work with you

Pushing for improvements – example



Meter Shop pros & cons

TECH	PROS	CONS
SS	<ul style="list-style-type: none"> • Can be programmed remotely • Easier to maintain/repair (no moving parts) • If it cannot be fixed, swap it out • More "intelligent" display, variable-based • RFID tags • Fault reporting 	<ul style="list-style-type: none"> • Programming not as automated as we would like; cumbersome • Durability? Unknown • Too many different screws! • Cannot be used in garages; shady spot • RFID tags (no typo) • Tilted screens difficult to see; esp for shorter people
MS	<ul style="list-style-type: none"> • Can be programmed remotely • Easier to remove a space • Sturdy • Can be hardwired, so can go in garage • Larger display; can fit more information • Fault reporting 	<ul style="list-style-type: none"> • Programming not as automated as we would like • Moving parts that break easily and frequently • 1 meter out of service = multiple spaces losing revenue
PBP	<ul style="list-style-type: none"> • Nothing to break/maintain on the street* 	<ul style="list-style-type: none"> • Data-intensive; requires constant tracking and updates • Additional stickers to maintain; add'l programming

Meter Shop's final word: The jury's still out



Parking Control Officers (PCOs) pros & cons

TECH	PROS	CONS
SS	<ul style="list-style-type: none"> LED lights are visible from the street Meter displays time left 	<ul style="list-style-type: none"> Not enough space on screen to display operating hours, days, and rates Does not have a light for “out of order” (red and green blink together, which is confusing)
MS	<ul style="list-style-type: none"> Yellow flipdots to indicate “out of order” Black/orange flipdots in back (facing the street) to indicate paid/unpaid Payment screen lists paid/unpaid spaces 	<ul style="list-style-type: none"> PCOs have to go to the meter to verify payment status, then return to cars at unpaid spots Only 10 flipdots; cannot use for more than 10 spaces
PBP	<ul style="list-style-type: none"> ? 	<ul style="list-style-type: none"> For MacKay meters (older technology, not wireless), requires enforcement via hand-held device

PCO's final word: Neither is great; PBP last



Lessons learned

- Listen to your Meter Shop
- Every time you make a change, test it test it test it
- Rollout every change in batches
- Database organization and coordination between theirs, ours
- Write down step-by-step procedures, protocols
- Think about how the new technology replaces the old
- The devil is in the details



Opportunities for improvement

- Simpler, more uniform regulations (internal decision)
- Automatic updates to and from vendor databases
- Larger and better LCD displays; more flexibility in programming; variables for special messages that repeat
- Policy-oriented default settings
- Ability to add and edit simple information to the inventory in the vendor database (e.g. maintenance routes, coin collection routes)
- Ability to make changes to meters in batches
- Better means of visual enforcement
- Better QA/QC

Thank you

