Today's LPR – Makes Dollars and Sense

It's ready for prime time

Presented By:
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The Business Case

- Interoperability is on the minds of all
- 250 million registered vehicles, 45 million tags, that's about 205,000,000 to go
- Investment to reach saturation $2,050,000,000
- 10 year lifecycle full replacement costs
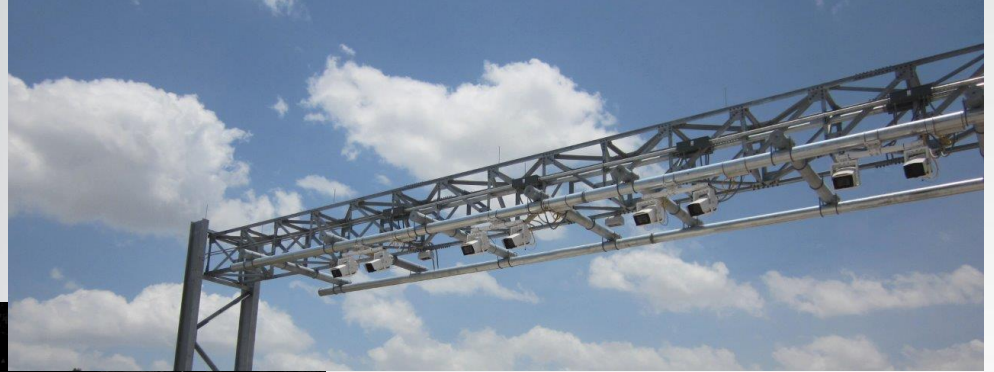- More and more imaged transactions every year

Historical Perspective

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Fresh Perspective

The Image Set

Lightly compressed 175K

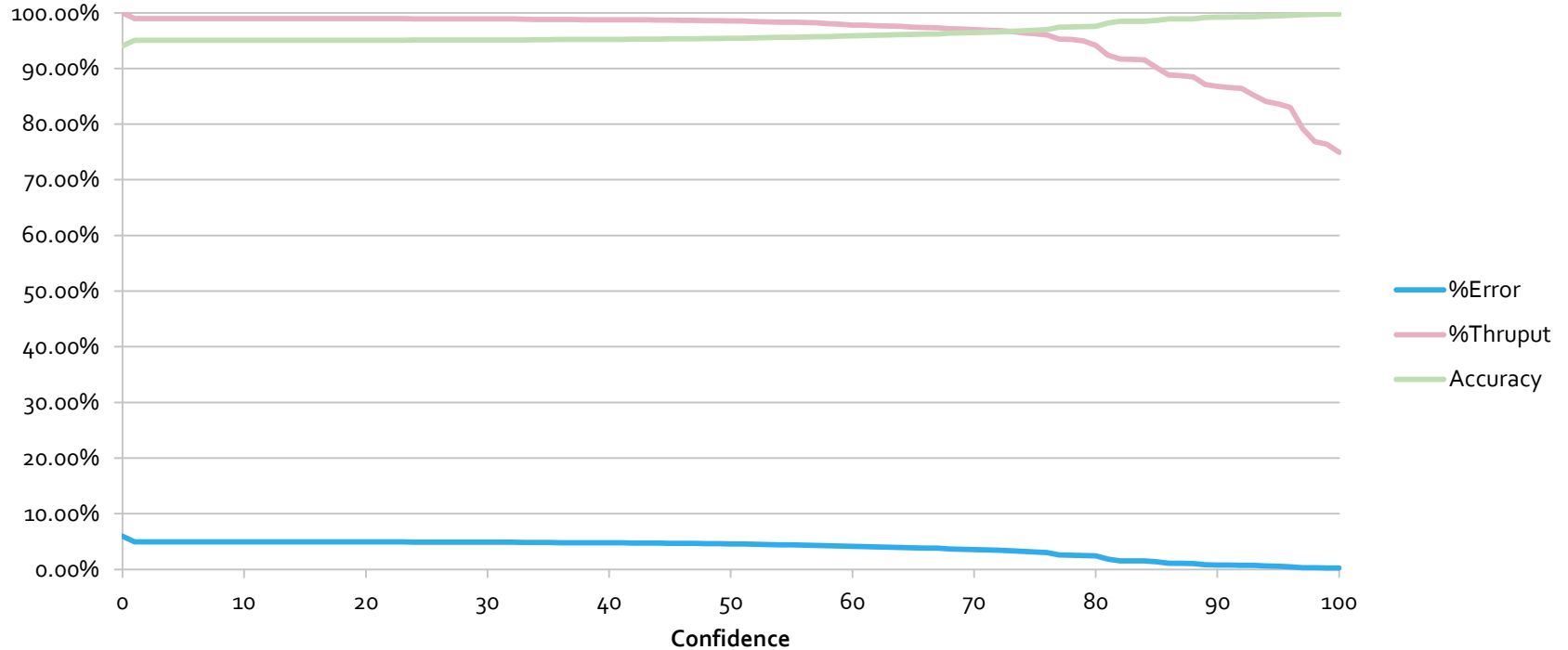Highly compressed 75K

OCR Patch Extract 13K

Common Definitions of Performance

- LPR accuracy needs a common language

  - Accuracy — *the ratio **of** reported plates from which characters, state, and type are reported correctly **to** plates which have been presented for OCR results and not excluded*

  - Attach Rate — *the ratio **of** plates that generate an OCR result **to** those that have not been excluded*

  - Confidence — *the qualitative belief in the results presented*

  - Excluded Plate — *those omitted from the sample set based on defined business rules, generally occluded, missing, bent, damaged, or illegally located.*

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The Performance Curve

The OCR / Human Review Comparison

OCR/Human Comparison MODEL

Number of Images to Process Per Month	8,000,000
# Images Processed per Year	96,000,000
# Images / Transaction	2
# Transactions/Year	48,000,000

Human ONLY Inspection

Yearly Salary	$ 40,000.00
G&A + Overhead Factor	180.00%
# Transactions Processed/Hour	800
# Transactions Processed/Year-Human	1,560,000
Number of Humans Needed to meet Throughput (No Accuracy considered)	31.00

Target Accuracy	99.9500%
Human Accuracy	97.30%
Achieved Human ONLY Accuracy	99.9500%
Number of Humans ONLY Needed Per Transaction to Meet Accuracy	2.10
TOTAL Number of Humans ONLY Needed for Throughput and Accuracy	65.2
TOTAL Annual Cost for Human ONLY Inspection	$ 4,697,009
TOTAL Cost Per Transaction Inspected by Humans ONLY	$ 0.09785

COMBINED HUMAN AND OCR-SERVER PERFORMANCE

Achieved COMBINED HUMAN/OCR Accuracy	99.9500%
Number of Humans Needed WITH OCR for Accuracy	1.32
TOTAL Number of Humans Needed WITH OCR for Throughput & Accuracy	41.02

TOTAL COSTS AND SAVINGS FOR 5 YEARS	FIRST YEAR
TOTAL Annual Cost for Human ONLY Inspection	$ 4,697,009
TOTAL Annual Cost for Humans in Combined Inspection	$ 2,953,279
TOTAL Annual Cost for OCR- Combined Inspection	$ 200,000
TOTAL Annual Cost for Human/OCR Inspection	$ 3,153,279
TOTAL Cost Per Transaction Inspected	$ 0.06569
TOTAL ANNUAL SAVINGS for Human/OCR Inspection	$ 1,543,730
TOTAL ANNUAL SAVINGS Per Transaction Inspected	$ 0.03216
	32.9%

"Without validation, most organizations experience a data entry error rate of between 2% and 8%" - Lighthouse IP Group

The Future Perspective

Full interoperability thru LPR/OCR Managed Accounts

Accuracy and attach rates surpass RFID in full traffic metric calculations

Systems are adaptable, intelligent , interactive and near real time

Cost of collection at an all time low – sub $.02

Authorities remove image based tolling customer penalties