



Managing Urban Utilities – Technical Aspects

*Capitalizing Asset Management through GIS
- from Hong Kong to China*

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Arrival of Natural Gas Era



CO₂ ↓ 26%
SO_x ↓ 40%
NO_x ↓ 42%



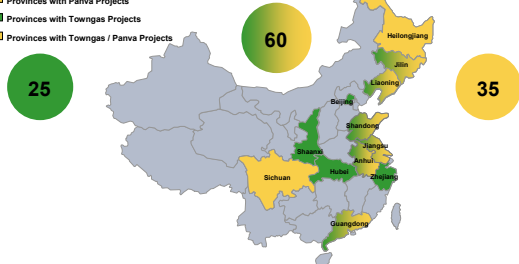
Mainland China Business



Mainland China Business



- Provinces with Panva Projects
- Provinces with Towngas Projects
- Provinces with Towngas / Panva Projects



ICT Advancement – Backbone for Asset Management



Our Grid Control Centre manages the operation of Hong Kong town gas network through SCADA and GIS

SCADA Competency: 3 Generations in A Quarter Century

1st Generation 1981 - 1993



DEC PDP11/44

1982

→ 20 Distribution governors + Gas holders

1987

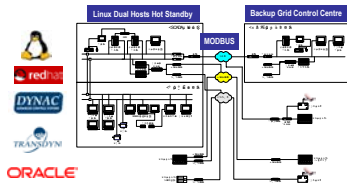
→ + Towngas production plants + 2 SNG plants

2nd Generation 1993 - 2003



- VAX-VMS Server
- Remote pressure control
- Remote valve control

3rd Generation since 2003



Exporting HK SCADA competency to 18 Cities in the mainland



Geographical Information System (GIS)

2nd Generation

Window + RDBMS (2004 -)



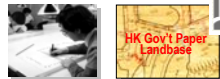
1st Generation

UNIX → Window (1994-2004)



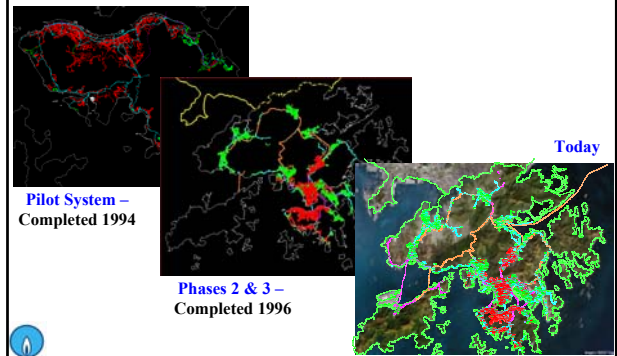
HK Gov't Digital Landbase

Before 1993

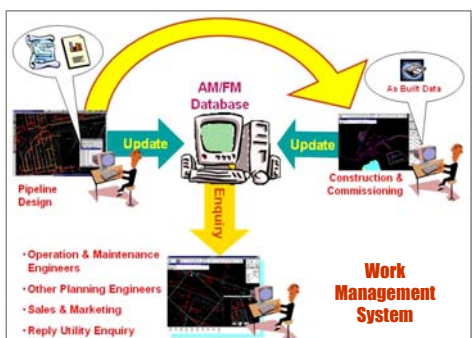


HK Gov't Paper Landbase

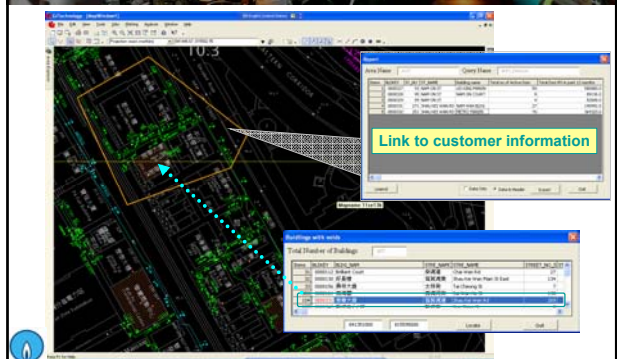
GIS Building for Asset Management



Capitalizing GIS in HK Asset & Work Management

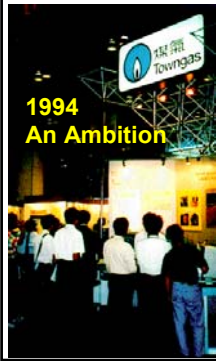
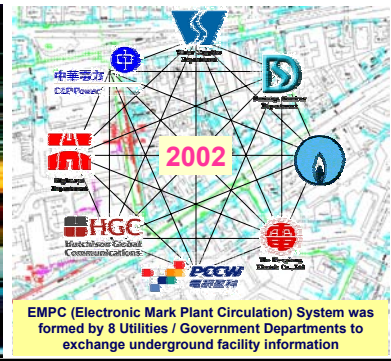


Capitalizing GIS in HK Customers & Building Information



Information Sharing amongst Utilities - from Dream to Reality

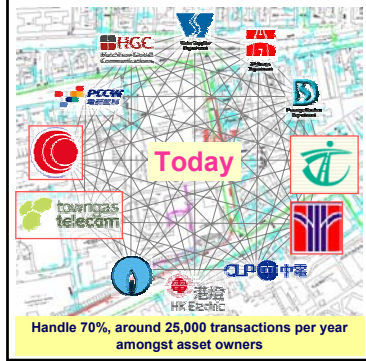
**1994
An Ambition**

2002

EMPC (Electronic Mark Plant Circulation) System was formed by 8 Utilities / Government Departments to exchange underground facility information


Capitalizing GIS in HK Sharing Information amongst Utilities



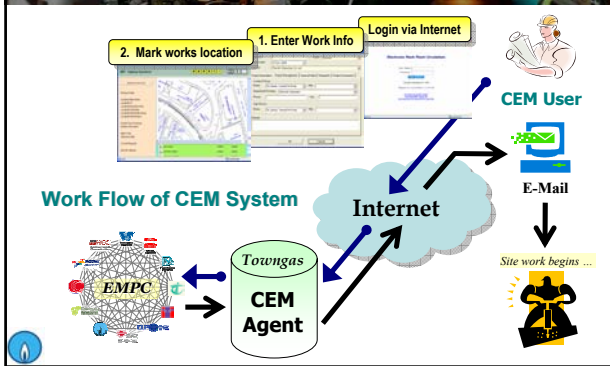
Today

Handle 70%, around 25,000 transactions per year amongst asset owners

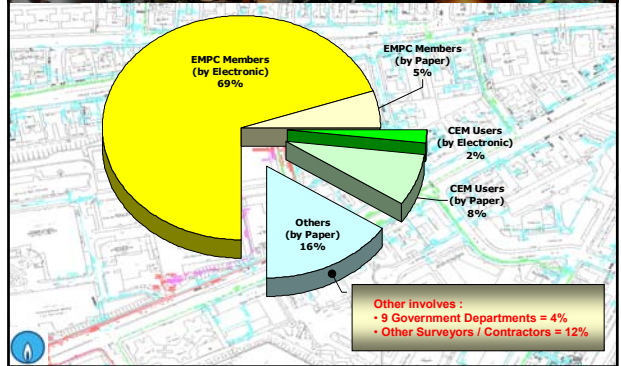
But I am a contractor /surveyor ??
- No GIS data license
- No u/g asset



GIS Data Sharing to Surveyors & Contractors



How far we're from 100% EDI?



... and Extending GIS to China JVs



Experience Transfers from HK to PRC

Should GIS be standardized in a city?

Should GIS be centralized in a city?



The Next Frontiers for Towngas' GIS



100% EDI



**Strengthening
Asset Management**



**PRC Industryware
for Gas & Water**

More Economical

More Reliable

More Environmentally-Friendly

□ □

**Thank
you**

□ □

Towngas
The Hong Kong and China Gas Company Limited