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Make better business decisions

Telecom Cloud Services

Best practice from the field

Camille Mendler

Principal Analyst

camille.mendler@informa.com

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Agenda

- Telecom cloud: The status quo
- Regional views
- Operator roles in the cloud
- Working with cloud enablers
- Five key lessons
- Final thoughts

Skylight

- **Telcos have committed US$11 billion to cloud pursuits in 2011**
  - Eight out of 10 transactions involve datacenter assets
- **Service differentiation remains poor**
  - 122 new services, 70% mass-market offers, heavy SaaS usage
- **Telco strengths are underplayed**
  - Security and cloud mobility aren’t pushed hard enough
- **ROI will come, but it’s a long game**
  - Cloud services contribute a single-digit percentage of telco revenues today

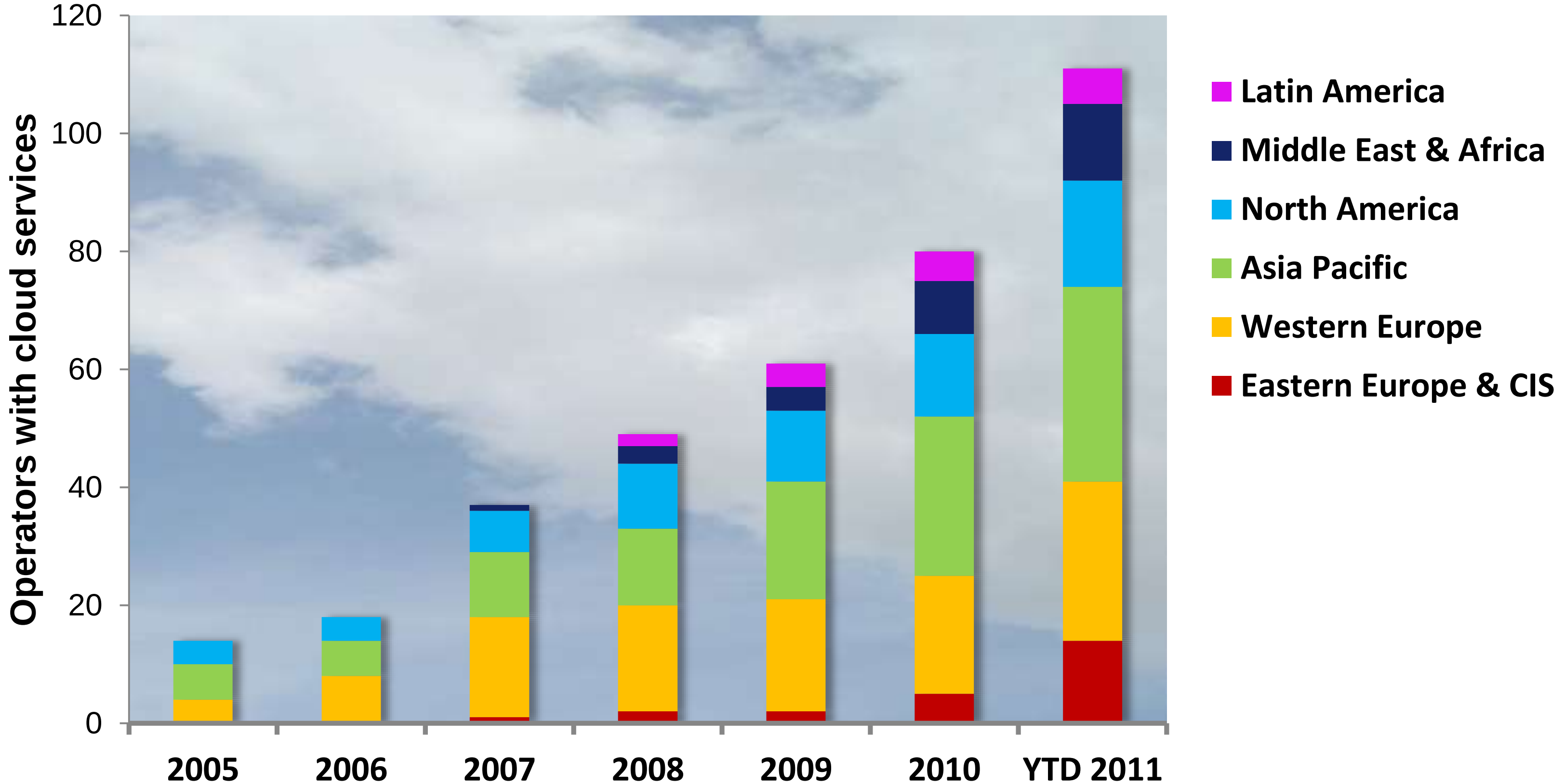
Informa Telecom Cloud Monitor: Online now

Data categories	Americas	Asia Pacific	Western & Eastern Europe	Middle East & Africa
• Acquisitions • Investments • Customer wins • Service launches • Revenues • Sales projections • Tech partners • Sales partners • Associations • Service trials • Certifications • Pricing	AT&T Bell Canada Charter Communications Centurylink/Qwest Comcast Cox Communications Digicel Entel Global Crossing Level 3 MTS Allstream Oi PAETEC Rogers Sprint Telcel (America Movil) Telconet Telepacific Telus Telmex (America Movil) Time Warner Verizon Windstream XO	AAPT (TCNZ) Airtel BSNL CAT Telecom China Mobile China Telecom China Unicom Chunghwa Telecom Far East Tone FPT Globe Telecom Hutchison Global Indosat KDDI KT Maxis NTT Group Optus (Singtel) Pacnet PCCW PLDT Reliance Singtel SK Telecom Smart (PLDT) Smartone-Vodafone Softbank Telecom Starhub Tata Communications Telecom New Zealand Telstra VNPT	Avea (Turk Telecom) Belgacom BT C&W Worldwide COLT Completel Deutsche Telekom Eircom Elisa GTS Central Europe Interoute Kazakhtelecom Koc.net (Vodafone) KPN Lattelecom Mobiltel (T Austria) MTS Netia Orange Portugal Telecom QSC Rostelecom Si.Mobil (T Austria) SFR Swisscom TDC Telecom Italia Telecom Slovenije Telefonica Telenor Telia Sonera Telekom Austria T-Hrvatski (DTAG) Tiscali UPC Vodafone Zon Multimedia	Bezeq du Cell C Etisalat Mobily MTN Qtel Safaricom STC Telkom SA Tunisie Telecom Umniah Vodacom

Source: Informa Telecoms & Media

More than 90 operator groups tracked & 240+ cloud vendor partnerships.

Status quo: Telecom cloud providers multiply

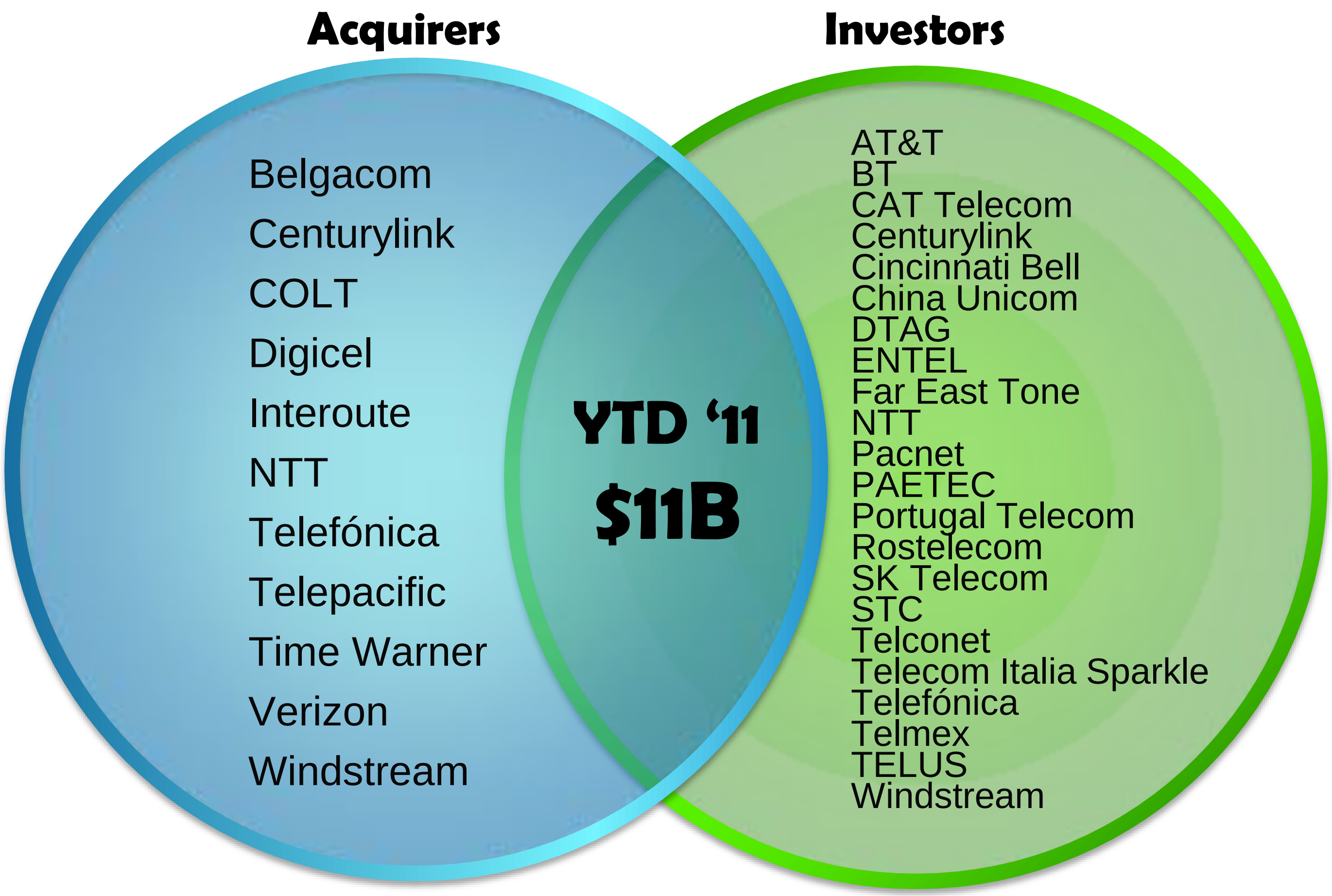


Note: includes SaaS, IaaS and PaaS

Source: Informa Telecoms & Media

The number of operators offering cloud services has doubled in 18 months.

Status quo: A global land grab is under way



Source: Informa Telecoms & Media

Eight out 10 transactions involve datacenter assets.

Regional view: Western Europe goes to market

Regional summary: YTD 2011

- **Maturity level** 3

- **Major investors**
- Orange
- Portugal Telecom
- Telefónica

- **Service launches** 46

- **Key enablement partners**
- IBM
- Microsoft
- Savvis

Source: Informa Telecoms & Media

The world's most active region in service launches.

Regional view: Eastern Europe & CIS invests

Regional summary: YTD 2011

- **Maturity level** 2

- **Major investors**
- Rostelecom

- **Service launches** 11

- **Key enablement partners**
- Central Europe On Demand
- IBM
- Microsoft

Source: Informa Telecoms & Media

Government support of cloud computing is helping market momentum.

Regional view: North America consolidates

Source: *Informa Telecoms & Media*

Regional summary: YTD 2011

- **Maturity level** 4

- **Major investors**
  - AT&T
  - Centurylink
  - Verizon
  - Windstream

- **Service launches** 16

- **Key enablement partners**
  - Cisco
  - IBM
  - Parallels

A fragmented market: Consolidation will continue.

Regional view: Latin America builds

Source: *Informa Telecoms & Media*

Regional summary: YTD 2011

- **Maturity level** 1
- **Major investors**
  - Telmex
  - Entel
  - Digicel
- **Service launches** 4
- **Key enablement partners**
  - Asigra
  - HP
  - NEC

Building data centers is laying the groundwork for cloud service launch.

Regional view: The Middle East & Africa partners

Regional summary: YTD 2011

- **Maturity level** 1

- **Major investors**

-Vodacom
- STC

- **Service launches** 6

- **Key enablement partners**

- HCL Technologies
- iHorizons
- Microsoft
- Sify

Source: Informa Telecoms & Media

Pursuit of IT-literate partners is a driving concern.

Regional view: Asia innovates

Regional summary: YTD 2011

- **Maturity level** 3

- **Major investors**
  - KT
  - Softbank
  - NTT
  - Telstra

- **Service launches** 39

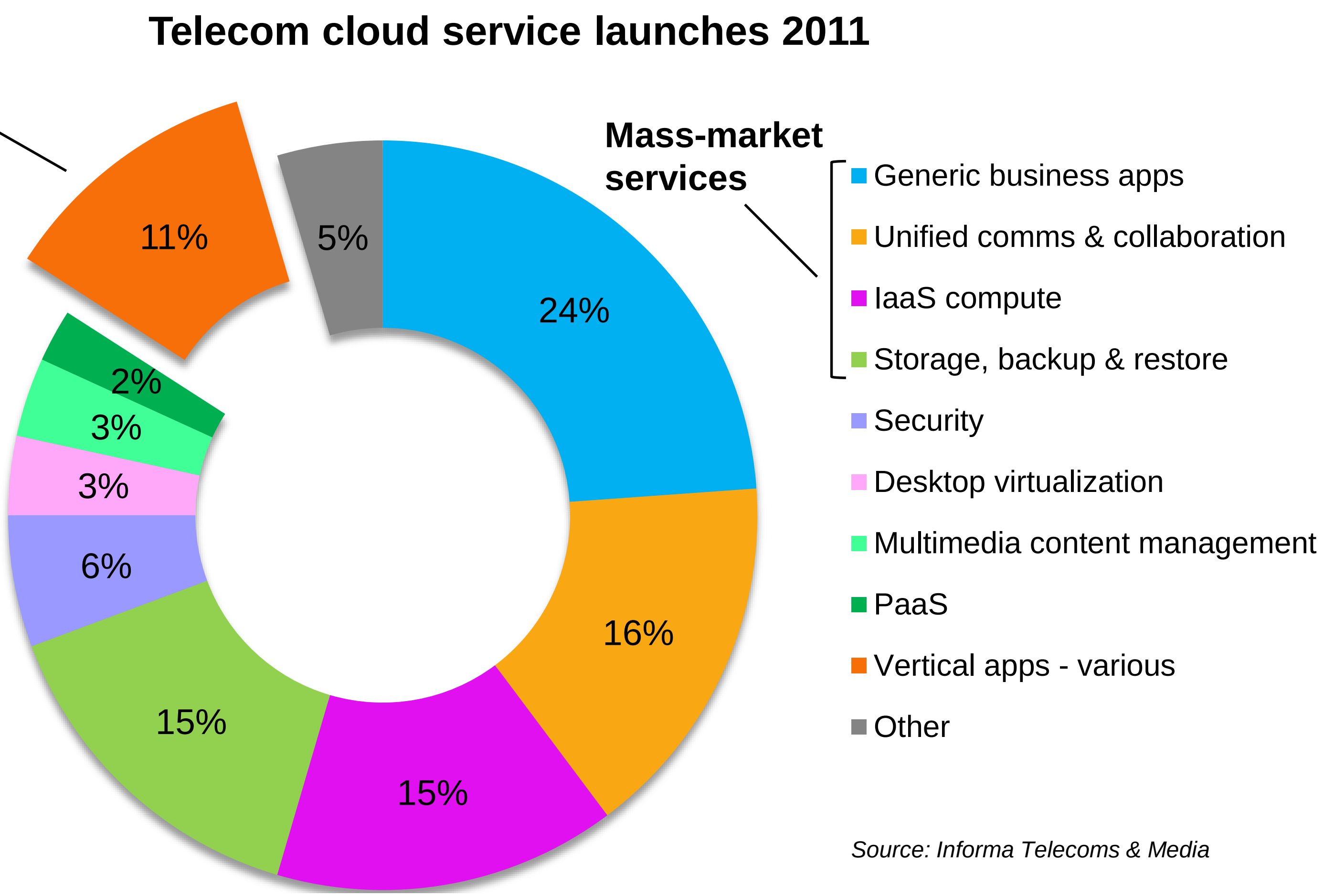
- **Key enablement partners**
  - Accenture
  - Dimension Data (NTT)
  - Microsoft
  - VMWare

Source: Informa Telecoms & Media

The most dynamic and innovative region for telecom cloud services.

Cloud portfolio: Mass-market plays are favoured

Vertical industry apps include:
- Retail
- Health
- Energy & Utilities
- Public sector
- Financial services



Source: Informa Telecoms & Media

Portfolio differentiation remains limited across operators.

Can’t decide? Get help from a cloud enabler

Cloud enablement

A sub-set of telecom managed services.

• **Go-to-market:** Enablers help operators sell cloud computing propositions to their customers.

• **Operational services:** Enablers apply the cloud’s operational model to the operator’s internal functions.

The right enablement partner can save time to market, maximize revenues and lower costs.

Source: Informa Telecoms & Media

Telco typical assets

- Brand
- Retail client billing relationship
- Wholesale client billing relationship
- Network reach
- Datacenter space
- Network & security ops management
- Channel partners
- Retail outlets

Enabler typical assets

- Consultancy
- Test / deploy
- Integration / migration
- Virtualization infrastructure
- Operations management
- Bill, orchestrate, provision
- Channel / ISV management
- SaaS
- PaaS
- IaaS

Payment

One-off

Consult, design, plan, build, deploy, integrate, migrate

Annuity

Maintain, operate, optimize, licence, white label

• **Fixed Price**
Units, over term, license fee

• **Variable**
Performance, deferred CAPEX, pay-as-you-grow, shared risk/reward

Go to market

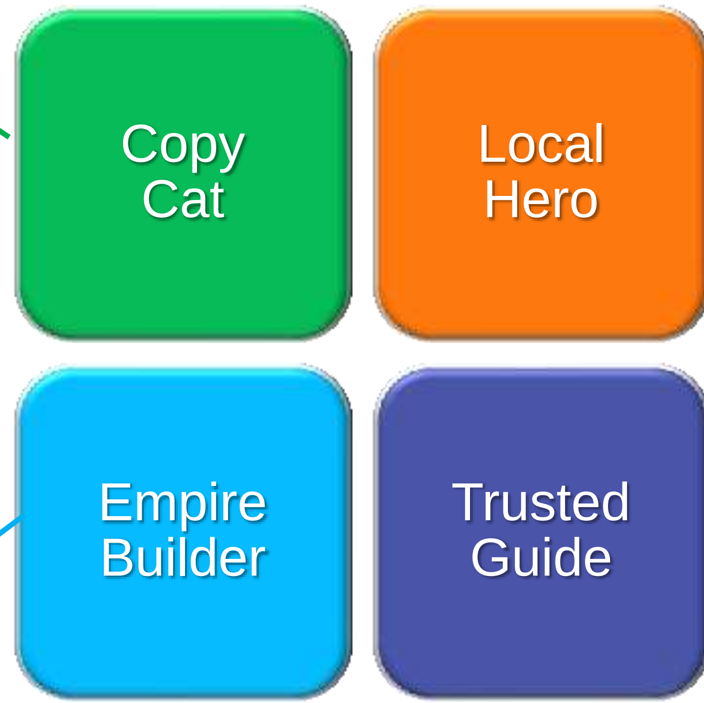
- Sell to
- Sell with
- Sell through

Operator roles: Take your pick or pick 'n mix

Characteristics
- New entrant, often national
- Copies pure-play commodity cloud players
- Often partners for market entry, white-labels services

Customer focus
- SME, mid-market

Example
- Virgin Media Business, Vodacom



Characteristics
- National, regional operator
- Local security/privacy rule adherence marketed
- May have local ISV program

Customer focus
- All segments, often SME focus

Example
- COLT, Maxis, PLDT, Singtel

Characteristics
- Regional or global play
- Drive to build/own assets
- 'Diffusion' branding common

Customer focus
- All segments, MNCs globally

Example
- Orange, NTT, Verizon

Characteristics
- Serves distinct communities
- Brokers supplier deals
- Integration, orchestration

Customers
- Verticals; up to MNC

Example
- BT, T-Systems, Portugal Telecom

Source: Informa Telecoms & Media

Operator roles are not mutually exclusive, and may change over time.

Lesson 1: Practice what you preach

Circuit switched or switched on?

Testing
- **Chunghwa** & Spirent : Cloud security testing.
- **KPN**, Interxion, HP, Microsoft, & nl-IX: Cloud Testlab service.

Automation
- **Charter**, **KT** & Parallels: Process automation.

Provisioning
- **NTT** & Nicira: Remote datacenter provisioning.
- **COLT** & Oracle: Joint cloud & connectivity provisioning.

Service management
- **Digicel** & Network Recovery: Outsourced white label cloud backup service.

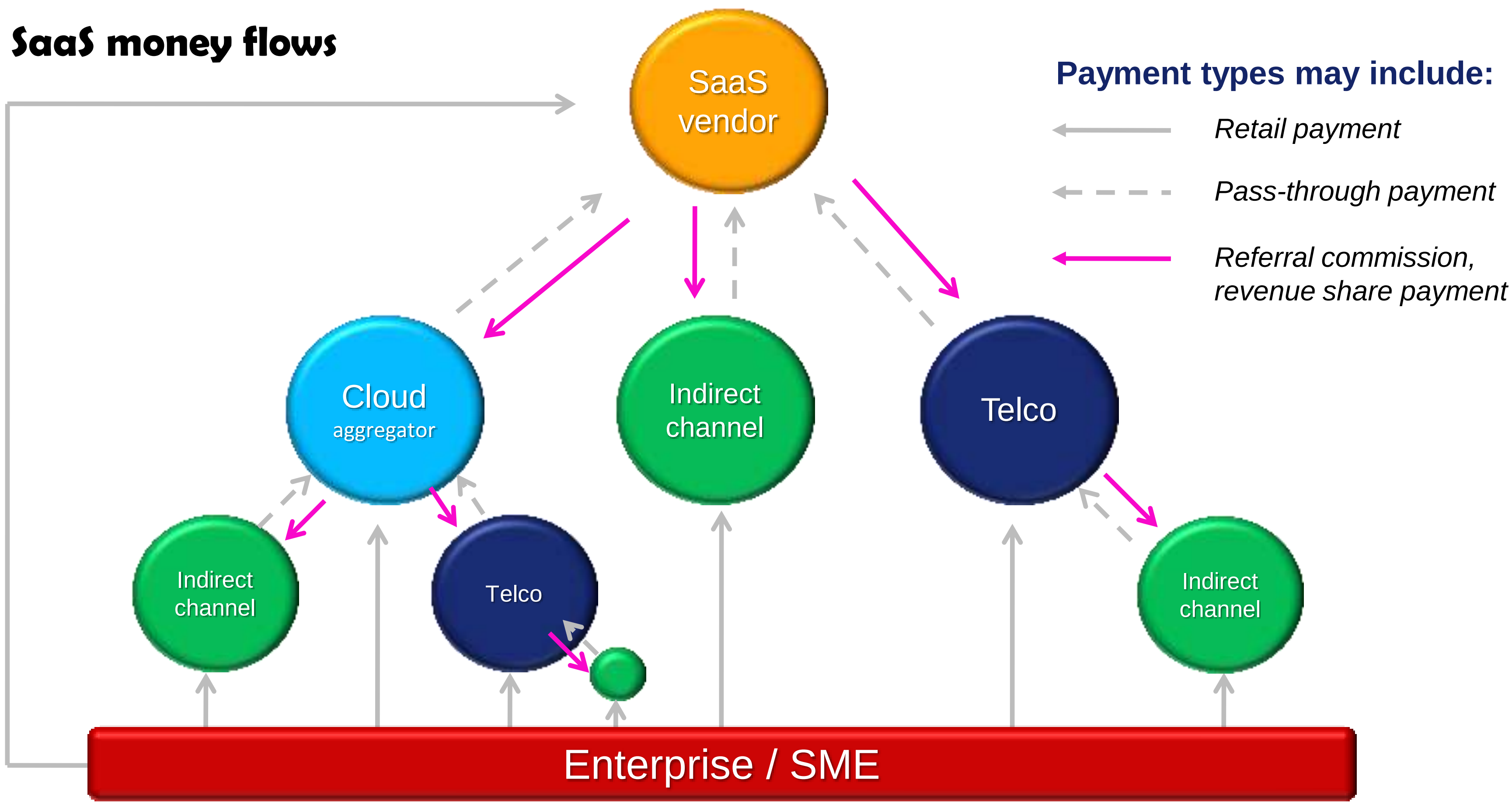
Billing
- **KPN** & EZWIM: Online bill presentment.
- **Tata Communications** & Zuora: IaaS subscription management.
- **TDC YouSee** & Aria Systems: Consumer services billing.

Payment
- **TDC** & Aepona: Mobile payments platform.

Source: Informa Telecoms & Media

Transform inside using the cloud's operational model; use what you sell.

Lesson 2: Use SaaS as a loss-leading sweetener



Source: Informa Telecoms & Media

The telco is a SaaS bottom feeder, but can use SaaS to lock in customers.

Lesson 3: Hang vertical 'wallpaper'

Energy & Utilities

- **T-Systems (DTAG)** cloud services for energy & utilities.
- **Verizon** and eMeter meter management.
- **C&WC** and IBM Smart Energy cloud.
- Client wins for **DTAG**, **KPN**, **NTT**, **THUS (C&WC).**

Retail

- **PLDT**, IBM and Alliance WebPOS Checkout service.
- **Portugal Telecom** & Grupo PIE small retailer services.
- **Orange** and Cegid retailer services.
- Client win for **BT Expedite & Fresca.**

Public Sector

- **Pacnet** and govt. of Chongqing, China to build cloud hub.
- **Rostelecom**, IBM and Parallels to build Russian government cloud.
- Client wins for **Lattelecom, TDC** and **Telefónica.**

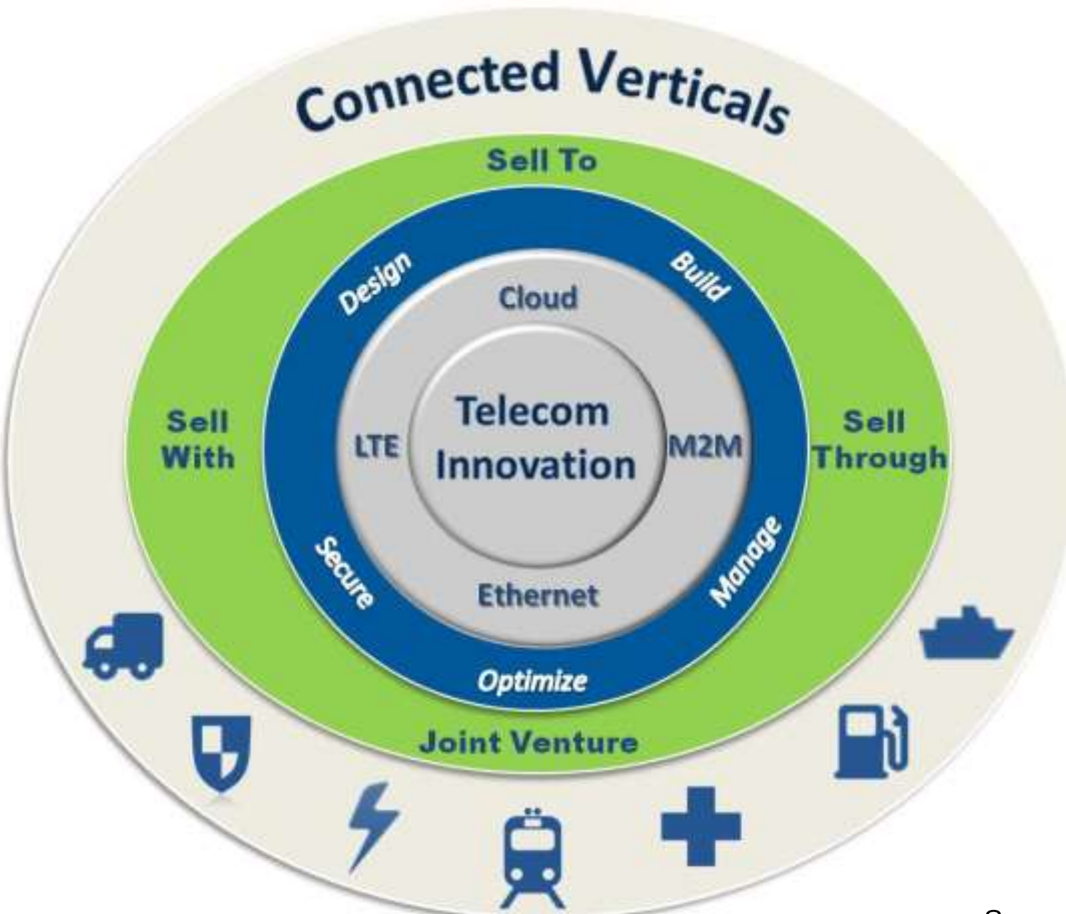
Health

- **AT&T** and Acuo medical imaging.
- **Evita (Swisscom)** health monitoring.
- **Singtel** and HP cloud M2M health monitoring trial.
- Client wins for **DTAG**, **Optus**, **Orange**, **Telstra.**

Source: Informa Telecoms & Media

Support vertical communities with a common foundation.

Lesson 4: Use cloud with other tech innovations



Source: Informa Telecoms & Media

Cloud is a starting point for service innovation, not a destination.

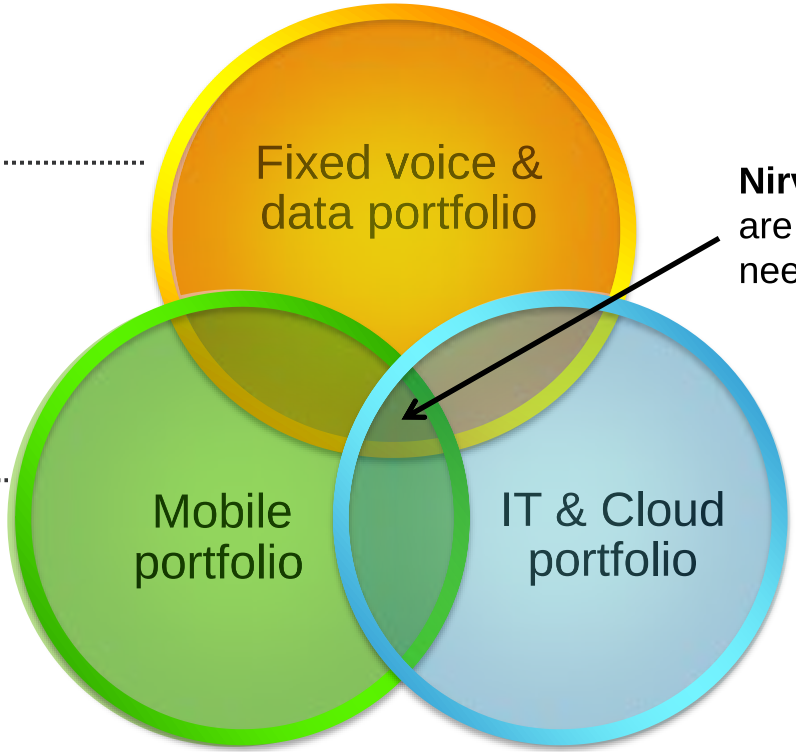
Lesson 5: Rethink silos to support innovation

Telecom: Typical enterprise silos

Fixed voice & data
- Connectivity services
- Telephony
- Unified comms
- Call centers
- Security / QoS
- Often MNC focused

Mobile
- Device management
- Expense management
- Security
- Country-level offers
- Often SME focused

M2M
- Can be separate division or part of wholesale department



Nirvana: When portfolios are segmented by client process need, not platform

IT & cloud
- Consult / integrate
- Security / DR /QoS
- Hosting / storage
- SaaS, IaaS, PaaS
- SMEs and MNCs

Source: Informa Telecoms & Media

Silos may hamper service innovation, particularly in cloud mobility.

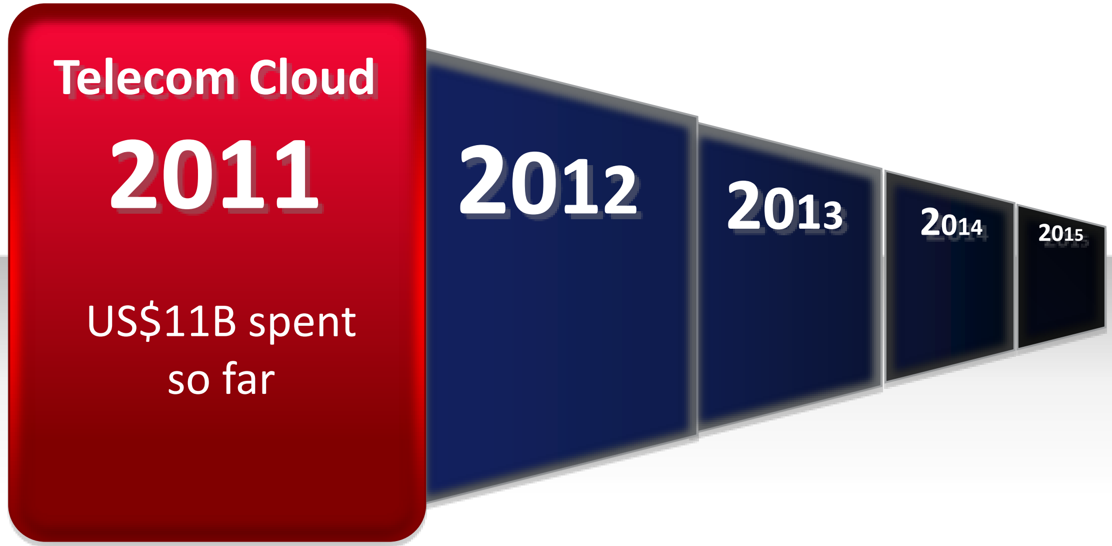
Chasing tomorrow's blue skies

Buyer	Cloud acquisition	What % cloud services?
Centurylink	Savvis (bought for US$2.5B)	• 1.6% (US$15.2m) • Reported Symphony cloud services.
Verizon	Terremark (bought for US$1.4B)	• 10% (US$30m) Reported annual run rate.
Time Warner	Navisite (bought for US$230M)	• 4% (US$5m) • Estimated from prior earnings calls.
Windstream	PAETEC (bought for US$2.3B)	• ?
?	Rackspace (M&A target)	• 13% (US$100m) • Reported in financials.

Source: Informa Telecoms & Media

Operators are staking positions today for future revenues.

Final thoughts



- **Build it and they will come:** Physical assets don't guarantee cloud success
- **Promote, don't hide a telecom heritage:** No network = no cloud
- **Commodity services are generic:** The only differentiator is price

Thank you!

For more information, contact:

Camille Mendler
E-mail: camille.mendler@informa.com
Twitter: @cmendler
Phone: +44 (0)7766 131528

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