Connect, Interact, Transact

A paradigm shift in the business model of communications service providers

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About the author

Martin Geddes is a thought leader on business models in the telecommunications industry. He co-founded the Telco 2.0 initiative, and was formerly Strategy Director at BT Innovate & Design. Martin is one of *Global Telecoms Business*'s '*Forty under forty*' 'people who are most likely to lead the industry over the next decade or two' (July 2009).

His career has progressed from IT consultant to accidental guru on business model innovation in the digital economy. He has a special interest in the impact of multi-sided markets on vertically-integrated products such as telephony and SMS.

As a consultant, Martin brings synthesised knowledge of the industry and technology, skilful analysis, an awareness of the political and social dimensions of organisations, and the capacity to act as powerful thinking partner and critical friend.

He offers:

- Lectures, interactive seminars, and masterclasses for senior managers on cloud communications, open business models and multi-sided markets
- Strategic thinking and scenario planning workshops for strategy teams and decision-makers
- Individual and team consultations that integrate practical education with the development of solutions for strategic business problems
- Research on specific applications to fit a particular client situation
- Mutually beneficial introductions between compatible businesses within the ecology, based on an extensive industry network.

Computing and communications: convergence or collision?

For well over a century we have had a global shared communications utility that offers an on-demand, standards-based, pay-for-what-you-use service that we call 'telephony'. Profits from telephony, with SMS, are the foundation of the global telecoms business, since these pay disproportionately for the infrastructure.

The same attributes – shared, on-demand, standards-based, pay-for-what-you-use – are being used by the IT industry today to develop a new utility computing infrastructure, called the cloud. This will enable IT to make the same leap of productivity and democratisation as happened for communications in the 19th century when the telegraph was superseded by the telephone.

There is a gap between the capabilities of communications systems that support human conversation, and the demands of modern commerce as enabled by cloud technology. Bridging this gap offers a substantial business opportunity.

Communications in the cloud is a paradigm shift in which power moves from ownership of data networks to control of software platforms. It sets up a new competitive dynamic between the IT and telecoms industries – and their respective ecosystems – to supply the capabilities that fill the gap.

For communications service providers, the opportunity lies in creating new and improved communications systems that support the needs of modern commerce; the opportunity for enterprises is to consume those capabilities in order to improve existing business processes, as well as invent new ways of doing business.

The challenge for every communications services provider is to engage with enterprises to understand their true needs for communication, and re-think their own business models on the basis of this knowledge

The true meaning of the cloud

The cloud is an enabler of new patterns of living and doing business. These new patterns demand that providers of communications services rethink their business models to reflect a qualitatively different business environment.

Typical explanations of the cloud focus on the technologies that deliver cloud computing:

> *"Cloud Computing is Internet-based computing, whereby shared resources, software, and information are provided to computers and other devices on demand, like the electricity grid." – Wikipedia*

This is an accurate description of the machinery, but is inadequate as a means of understanding the impact of the cloud. It is rather like attempting to understand the automotive revolution by considering the properties of asphalt and oil.

The cloud is a phenomenon that is bigger than just the technology of cloud computing. It can be viewed from a number of angles.

- As a **technical** development, it involves not just managing data centre resources in new ways through modular hardware and virtualisation. The cloud will also lead to new patterns of distributed computation to manage privacy and security issues. Today, data is stored at or moved to the location where the application is run. Tomorrow, the virtualised application may be moved to where the data is securely stored.

- Seen **politically**, the cloud blurs boundaries between regulated media, IT and telecoms industries. It makes open government possible by eliminating the distribution costs of data. It allows users to arbitrage different legal regimes for copyright and censorship. The cloud also enables people to self-organise in new ways for both peaceful and violent purposes.
- From a **social** perspective, the cloud is an overlay of new collaboration and communications capabilities that extend and amplify our ability to co-operate with people outside our immediate organisation or geography. This will change organisational structures of all sizes, from states to firms and families.
- From an **economic** viewpoint, it is a way of doing business 'on demand', providing data processing resources with no fixed overheads and low variable costs. The cloud also represents a shift from buying products – for example, shrink-wrapped software – to services, such as SaaS. This scenario favours more agile and smaller organisations that are able to respond dynamically to customer needs.

The cloud is all of these, as well as a dream come true for every marketer in the technology business who needs a 'new-new' thing to hype. However, none of these descriptions truly captures the cloud's essence, or the magnitude of its consequences for our society, economy and daily lives.

To begin to understand why, we must examine the relationship between communications, computing and commerce, and the data and people that unify these worlds.

The cloud is a socio-economic revolution

The cloud offers not just a quantitative improvement in the cost of computing, storage and transmission; it provokes a qualitative change in the structure of our information society.

The efficiency with which IT accelerates pre-existing 'industrial' ways of doing business is achieved through tight systems integration of the manufacturing, supply, distribution and retail businesses; this requires expensive systems integration consultants to develop the software, and systems that are scaled to cope with peak volumes. These capabilities are accessible only to large corporations that can afford the high fixed costs and spread them over large volumes of transactions.

Yet we, as citizens, live in a world of readily-available and low-cost computers, phones, electronic communications and online services. Our social gestures and economic interactions are increasingly taking digital form. The resulting data has the potential to be shared globally, beyond the boundary of the particular device, server or enterprise in which it originates. The form the data takes is increasingly standardised, and comes with metadata that makes it easy to process automatically. It is possible to search, retrieve and process data at minimal cost.

Consumer services produce cheap data as the raw material for innovation. Once this data is aggregated, analysed, and exposed it provides the refined fuel for the cloud economy: *cheap information*. This resource affects our patterns of economic and social interaction as profoundly as did the innovations arising from the technologies driven by steam, electricity and oil.

The cloud is an infrastructure for capturing and sharing cheap information in real time. This cheap information complements bodies of cheap knowledge such as Linux and Wikipedia. Together these deliver cheap answers to social and economic co-ordination and co-operation problems, making those answers available to every enterprise and citizen.

For example, ten years from now you may go into a clothing retailer, pick out the items you like, take them to the counter, pay, and then put the clothes down and *walk out without them*. The retailer will then custom-make the clothes to your own size and specification, and deliver them to you the next day. The 'cheap information' is personal data on your body-size, your delivery details and your payment preferences. These details are not tied to any given retailer, and the retailer does not need to carry the cost of building and operating the system to acquire them. Rather, they are part of the product personalisation service offered by the payment card issuer. Whilst a physical card may provide a secure identity token, the personalisation information is managed as a cloud service. The payment network such as Visa may not even store the personalisation data, but merely points to an associate cloud platform like Amazon whose data is federated with the payment card.

In the 21st century, the cloud's new resource of high-quality, relevant and timely information affects our patterns of economic and social interaction as profoundly as did the innovations arising from the technologies driven by steam, electricity and oil. The cloud democratises the tools of global commerce by removing the capital and organisational barriers to creating new information-driven applications and business processes. Conversely, it greatly increases the economic power of the information brokers who enable these exchanges.

This new abundance of cheap information, coupled to powerful intermediaries, has real practical implications for business strategy in the present. Old assumptions of cost, scarcity and barriers to entry need no longer hold across many sectors of economic activity. Yet a narrow focus on technology is pervasive in the IT and telecoms industries: the cloud is seen merely as a new mode of cheap computing, storage and networking, and reduced IT service delivery costs. This is akin to thinking about the benefits of the 'cheap oil' economy to horses and carts through creating smoother roads.

The question is, how can we discover valuable new uses for cheap information that will improve how we live, work and trade?

Putting people back into the cloud

To find rich new opportunities, we must transcend the narrow technocratic focus on data processing and data centres, a perspective that misses three vital elements of the cloud story:

1. People, who are the basis of society through their ideas, energy and spirit
2. Conversations, the mode in which people make their wide-ranging exchanges
3. Commerce, where conversations lead to mutually beneficial trade.

These elements are inherently interlinked. All markets are forms of conversation between people. The impulses of demand and supply are ultimately initiated by people, who are engaged in a negotiation over quality, quantity and price.

The efficiency and effectiveness of this conversation depend on the tools we employ. In our earlier example, the consumer in the clothing store hands over a *physical* card to convey identity data face-to-face, and may authorise release of personalisation data as part of the *physical* use of the point of sale terminal. There is no need to fill in any forms or dictate the data to a sales assistant, with the resulting labour cost and (potential) embarrassment over waist- or bosom-size. Yet only small subsets of commercial interactions are conducted at such close range between the enterprise and the customer. As the physical distance between enterprise and customer increases, so the opportunities expand for a communications service provider to enable rich conversations.

While people are both the wellspring from which revenue flows and the sink-hole for cost of sales and customer service, the centrality of the people element means that the tools for conversation – especially voice and text-based messaging – will remain critical to the way we conduct commerce. Those who provide and control the means of human conversation will have increasing power in the commercial world.

To focus only on cloud computing technology is thus to wholly miss the parallel social and economic revolution that is centred on communications, in which richer conversations enable new patterns of commerce.

The immediate problem that enterprises face is that every communications medium – whether traditional post and telephony or modern email and SMS – has limited scope to support rich conversations. For example, it may be of considerable interest to a call centre to know that a customer is roaming abroad, and that it is 3am in her time zone, and thus an inappropriate time to make a sales call. Such contextual information is valuable because it enables a conversation to be held on the right medium, with the right people, and at the right time. At present this information is either expensive to acquire, or unavailable at any price, even if both parties are willing to share it.

Such bottlenecks in passing context and process-state information occur because the needs and capabilities of people, conversational media and commerce progress at different rates. People adopt new behaviours – such as mobile roaming or online social networking – that move their conversational capabilities ahead of that of commerce.

The 'conversation gap'

The social CRM trend represents the efforts of enterprises to catch up and exploit the conversational opportunities that social media provide. Conversely, legacy media with an analogue or pre-internet heritage have limited intelligence and extensibility, and thus fall behind the needs of modern commerce. For instance, a standard telephone call cannot pass on a security digital certificate together with the caller ID information. An SMS cannot set itself to expire when no longer relevant. These misalignments of the capabilities of conversational media with the needs of commerce are 'conversation gaps' that result in inefficiency and ineffectiveness in doing business.

The root cause of the conversation gap is an unhelpful positioning of the boundary between people and machines. All too often, human beings are reduced to doing rote tasks – with attendant risks to accuracy and security – that are better suited to computers. Meanwhile, computers are designated tasks they cannot perform satisfactorily, such as understanding the nuance of a customer's request for help. Direct human interaction is utilised to compensate for the failure modes of the tools we give customers to search for information and to service their needs.

There are ten specific sub-forms of the conversation gap:

- The **cost gap**: The difference in operational cost between human labour and an automated system is several orders of magnitude, and errors introduced by humans cascade into further cost.
- The **confidentiality gap**: Human beings are asked to handle sensitive data, and data can leak.
- The **customer experience gap**: The customer's time is wasted on tasks that do not create value. The 'cost' of the service to the user is the combination of its price, and

the effort to use it; thus poor customer experience is a form of cost shifted on to the customer that reduces demand and willingness to pay.

- The **capability gap**: Our tools of conversation assume a one-size-fits-all and do not provide features reflect the diverse roles people adopt in their daily lives, and the different demands that arise as a result. For instance, a next-generation Caller ID would command different levels of caller information disclosure for each of 'child', 'friend', 'customer', and 'stranger'.
- The **co-presence** gap. Ideally conversational media would provide parties with an experience as good as 'being there' together. If the conversation is locked into a narrow range of media types with weak interactivity, then it falls short of 'being there'.
- The **coverage gap**: The 'coverage' is the range of situations in which the media make the conversation possible at all, despite 'not being there' together. If a customer's available modality of conversation is Skype, and the enterprise cannot originate or terminate Skype calls, then they cannot converse, and the enterprise loses business.
- The **capacity** gap: Each tool has to be able to scale to meet the needs of enterprise use. This is not just a question of networks scaling to accommodate load, but also of the user experience being able to scale to prioritise, filter and route an ever-rising number of requests for interaction.
- The **conformance** gap: The tools of conversation fail to meet the legal and social norms of each jurisdiction, and thus limit their use in commerce. The current controversy over encrypted BlackBerry messenger use that cannot be intercepted by the governments of the UAE, Saudi Arabia and India is an example of this.
- The **culture** gap: Each society has different norms and historical associations with communications, such as Americans having a higher propensity to use voice compared to text-centric Europeans. What is acceptable and ordinary use of personal data in the USA is regarded as unethical in Germany, even if it conforms to legal constraints. Tools of conversation need to reflect these differences.
- The **'cool'** gap: The other gaps address functional shortcomings of our tools of conversation. However, an increasing proportion of the value we receive from goods and services is provided by non-functional aesthetic and social value. People want to use communications services that make them feel and look good. If teens are tweeting and texting, then asking them to talk might as well be asking them to telex – it just isn't going to happen.

Filling these conversation gaps is a multi-billion dollar opportunity for both enterprises and communications service providers.

The mandatory middleman

Enterprises cannot solve these gaps unilaterally by building smarter enterprise web sites. They are dependent on communications services providers to act as middlemen and provide channels for messaging:

- **Web sites are like one-way mirrors.** Whilst a web site allows the customer to reach out to the enterprise, the converse is not equally true. Only tools like SMS and telephony can 'buzz , flash and ring' to interrupt the user to participate in a time-sensitive business process.

- **The user is blind to messages at the enterprise web site.** Most messages do not merit interruption of the user. Enterprises therefore need to send messages to a 'place' the user will 'pass through' and view in their typical day. These 'places' take on a wide range of forms, from a social media service to a smart tablet you hang on your fridge door. These 'places' are intrinsically provided by a communications service, and not a general-purpose enterprise web site. (This problem of being 'out of sight' is a common failing of online banking services, which offer a proprietary secure messaging capability, but leaves the user blind to the existence of a new message.)
- **The web remains deaf and dumb.** Browsers continue to offer poor voice integration, and this is likely to remain so for several more years due to the enormous inertia of the legacy voice network technology.
- **The open nature of the web is a blessing for innovation but a curse for security.** Combining the capabilities of multiple media, such as sending an email or SMS to notify the user of a message on the company website opens the door to security problems such as phishing.

These issues tell us that there will continue to be intermediary communications services that link enterprises to their customers, and that these cannot easily be disintermediated by enterprises. The value of each communications network to its users is proportional to the number of other people you can communicate with. This increasing return to scale implies there will be a small number of communications platforms acting as middlemen between enterprises and their customers, each with large numbers of users.

The cloud communications service provider battle

As these communication platforms between enterprises and their customers improve, they enhance customer experience, increase sales and reduce cost. Enterprises are – compared with consumers – therefore disproportionately willing to pay for such tools:

- The more pervasive the opportunity to communicate becomes, the more chance there is of the buyer being able to express a demand in the moment of desire, and the seller being able to respond.
- The richer the interactive media, the less the need for human effort to overcome any limitations; as a result, both the enterprise's costs and the customers' usability barriers will be lower.
- As communications media become more sophisticated, value-subtracting tasks such as authentication and payment become invisible to the user, and the security of the exchange is better assured.
- Like data centres, call centres can be considered a form of cloud resource whose supply and demand must be managed. Instead of racks of computers, rows of people are available to provide 'on demand' conversations with customers. Better communications tools will enable machines increasingly to provide complete automation of business processes, which will also readily absorb spikes in demand for customer contact, and lower cost.
- The relatively inelastic commodity that is human labour can then be focused on dealing intelligently with complex, custom or exceptional business processes, thus raising customer satisfaction.

To achieve these benefits, the communications tools' enhanced capabilities must be fully integrated with applications in *both* the data centre and call centre. This strongly contrasts with the norm today when designing and deploying enterprise resource planning and customer relationship management platforms. Automated customer contact using communications-enabled business processes is an after-thought serviced by niche vendors, not a core function of these platforms. This will change, and the platforms for commerce will become power-brokers among the platforms for communication, and vice versa.

These communications tools only have benefit to enterprises if they are placed in the hands of consumers. To achieve widespread distribution and adoption, the telco revenue model for voice and messaging will flip. To compete against free offers from search and social media services, the marginal price to the user must be zero. Metered minutes and messages will be replaced by a flat access fee with unlimited usage, which, critically, will 'feel like free'. Instead of metering end user activity, telcos will charge enterprises for each use of a rich communications capability to connect, interact and transact with their customers.

Whichever party carries the cost of the conversation medium, the conversation gap must be addressed by the parties that supply these tools:

- Telcos and postal providers, as primary suppliers of 'legacy' (yet universal, popular and profitable) telephony, SMS, MMS and mail services to both users and enterprises
- Consumer search and social media services, e.g. Google, Facebook, or Skype
- Enterprise unified communications providers, e.g. Cisco, Avaya, or Microsoft
- The media and advertising industries, comprising TV, radio, print, billboards.

Each is vying to provide compelling conversation channels between customers and enterprises. Over time, these communications service providers will increasingly converge on a similar set of capabilities. Each system integrates voice, messaging, collaboration and commerce into a single suite, delivered using cloud technology.

All these parties are destined to become cloud communications service providers if they wish to remain in business. As each moves in this direction, there will be intensified competition across traditional industry boundaries. Significantly, none of these players – neither telcos, nor social media services, unified communications providers, media companies, telecoms equipment suppliers, or IT vendors – has yet truly risen to the challenge of rethinking their business models for the new patterns of conversation and commerce that are brought by the cloud.

For telcos, there has been little innovation in the core voice product since Caller ID. Mobile telephony simply extends the reach of what is essentially the same product as landline service. If this stasis persists, users will perceive telco voice and messaging to have diminished value and will find better things to spend their money on. The telco share-of-wallet for core communications spending will plummet, in the same way that Skype has displaced the phone card for international connections among family and friends by being both cheaper *and better*.

To remain relevant and thrive in the cloud, all communications service providers must rethink their products so that they help enterprises to:

- **Connect** cheaply and easily to their customers,
- **Interact** richly and seamlessly with their customers,
- **Transact** securely and swiftly with their customers.

Connect–Interact–Transact

Until now, telco communications products have had only limited capabilities to service enterprise users' needs for customer contact.

Consider as an example today's freephone product. The burden of the call cost always lies with the enterprise, despite the value of a customer's inbound call varying according to where in the business lifecycle it is received. Before a sale, the enterprise typically wishes to carry the cost; after the sale, the tendency is for the user to have to absorb it. A more fine-grained charging approach is possible, allowing cost to be varied and allocated more dynamically and intelligently.

Examples of opportunities to create new revenue models are as follows:

- **Connect**: A 'Mobile Freephone 2.0' might allow free calls to automated call-handling systems, but offer human contact for after-sales support only in return for a fee, that the enterprise could choose to refund if the cause of the call is a fault in its business processes.
- **Interact**: Voicemail could offer a suite of new interaction capabilities, such as the possibility of programmatically deleting a message or making messages interactive (for example 'press 1 to confirm your dinner reservation').
- **Transact**: A 'PayPal for voice' capability would enable users to authorize a payment by hearing an automated message from their telco that asks them to enter a PIN. This functionality would remove the need for users to insecurely and inefficiently dictate name, address and credit card details to a call centre agent.

Additional value will be created through integration of all three sets of capabilities, such as a SIM card being used to authenticate the customer to a CRM system and a bank to complete a payment.

All parties must also master the skills to manage the critical privacy and regulatory issues associated with acquiring and utilising abundant cheap information.

The applicability of this Connect-Interact-Transact framework is not unique to telcos. Social media players can become a rich channel for interaction between enterprises and their customers. Monetising social media usage through advertising alone demonstrates a severe shortfall in vision. Unified communications players need to extend the reach of their products out of the silo of the individual enterprise (or federations of enterprises) to connect with their customers.

Make communications services fit for purpose

To satisfy customers' needs for cheaper and better service, enterprises must turn their attention outwards, focusing on communication and collaboration with customers and suppliers. Communications service providers of all kinds have little choice but to rise to this cloud communications challenge, and give enterprises the tools to do the job.

Failure to build ‘cloud-ready’ propositions and business models has serious consequences for telcos, who face gradual substitution of consumer services by new entrants. These services are frequently advertising-funded and thus free to users, or come ‘free’ with a smartphone. The newcomers better understand how communications services need to create and consume cheap information as an integral part of their function, and enable new forms of commerce.

The pattern from previous eras of mainframes, PCs and mobile phones strongly suggests the emergence of a small number of dominant global or regional cloud communications platforms. There will be a consequent upheaval in the business models of providers of pre-cloud technologies such as post and telephony, since these are patterned on an era of analogue communications.

Media companies immersed in the cost and capability assumptions of the past have found themselves increasingly subject to intermediation by cloud search and social media giants. If telcos do not act, it may be their fate to become equivalently subservient to ‘the next Google’ that aggregates not media content but the telcos' network APIs. The ultimate threat is one of envelopment, as telcos are left with all the costs of media delivery for voice and video, whilst value migrates to signalling in the control of ‘over the top’ applications.

The opportunity for telcos is to exploit the success and ubiquity of their legacy services, and build on earlier successes in offering new communications capabilities that support commerce, such as SMS short codes.

Over a trillion dollars is spent every year on post, telephony and SMS. We are nearing the moment of ‘peak telephony’, where we pass the high water mark for combined fixed and mobile voice revenue. The question every cloud investor must ask is, who will seize the moment and build the cloud communications services that are the new growth channels for customer contact? Will it be telcos, social media players, unified communications providers, traditional media companies or someone new and different?

Join me in creating the future of communications

The opportunity for all communications service providers is to create compelling new communications services that support the need of enterprises to do business 'in the cloud' and communicate with their customers efficiently, effectively and securely.

To succeed, communications service providers must get to grips with enterprises' real requirements for customer contact. There is thus an opportunity for visionary communications service providers (be they telcos, social media players, unified communications providers or traditional media companies), along with their wider ecosystem of technology suppliers, to engage with enterprises to develop this understanding.

On the basis of my long experience in IT and telecoms, and my study of the collision of these two industries, I have developed the 'Connect-Interact-Transact' framework to understand this paradigm shift in the communications-IT-media landscape. This paper has offered an introduction to the need for this approach and begins to identify how it might be applied.

The fuller presentation of the framework:

- Describes in detail the capabilities that are needed for each of 'connect', 'interact' and 'transact'.
- Proposes a suite of unmet needs for rich customer interaction, and new services and revenue models to meet those needs.
- Stimulates a more thoughtful dialogue between enterprises and suppliers of communications services and technologies by reframing the problem that is to be solved.
- Gives structure to the resulting inquiry to extend and integrate communications products (email, voice, voicemail, SMS, MMS, UC, social media, etc.) so that they become a coherent platform to service the need for customer contact and commerce in the Cloud.

With my associates, I have also developed a consulting engagement methodology to apply the framework. This approach brings together the 'big picture' of industry change, detailed industry knowledge, investor insight, and organisational change management expertise. The understanding that arises from collaborative inquiry will enable both enterprises and communications service providers to reshape their business models to fit the new cloud reality.

I am exploring the most promising opportunities with a few pioneers, and invite you to participate in creating the future of communications as part of that community. To discuss the ways we can explore, map and cultivate this new territory together, please contact me at mail@martingeddes.com or visit www.martingeddes.com for more information.