A Study Of Business And Operational Performances Of Call Centers Using Speech Technology

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ABSTRACT

Speech technology is being used to increase revenue by automating activities that previously required agent assistance, such as a credit line increase or cross-selling a related service, and by providing new services, including voice portals, voice activated dialing and e-mail reading.
For both enterprises and their customers, the financial benefits of a properly implemented speech recognition system are huge whether a speech system is new or added to an existing Interactive Voice Recognition (IVR) application.
The researcher makes an attempt to investigate the Evaluation of Financial and Operational Performances of Call Centers using Speech Technology to innovate and to suggest a new business strategic model in the study area.

Keywords: Cost Reduction, Call Centers, IVR, Agent, Speech Technology, Voice Controlled

INTRODUCTION

The convergences of Management Science and Information Technology researchers are continuously increasing among faculties. On one hand Computer Science find new source of difficult and interesting questions in the analysis of models for business process. On the convergence, the Management Researchers finding a new strategy on Operations and Information Technology, that cycles through the processes namely Interoperability, Disintermediation, Globalization and Convergence to establish a new networked & optimized business[1] strategy in the domain of *Strategic Operations and Management of business process.*

Businesses around the globe are discovering that voice technology dramatically boosts efficiency and productivity in ways that text-heavy solutions cannot. By greatly improving response time and workflow, speech processing has become a significant competitive advantage and that speaks volumes to corporate leaders worldwide [2].

Let us highlight some of the specific constrains involved in this process of using Speech technology in the main stream of business in general and in a Call Center specific [3], and being resolved through the management science. So the real challenge for us is the "Emerging Business Strategic trend after the Globalization in Call Centers".

And that paves the way for operating the calls via synchronizing human speech with the existing computer and leveraging to show how Computer Science and Management Science are interwoven to innovate a new business strategic model [1] for operational performances in a Call Centre.

Speech recognition has traditionally been viewed as a contact center productivity tool for service organizations because that is where the financial payback has been the greatest [4]. But the technology has already proven effective in improving productivity and generating revenue outside of contact centers, when used throughout the enterprise. On the productivity side, speech recognition may yield the following benefits in a Call Center [5]

✓ Reduces calls to live agents,
✓ Shortens call lengths,
✓ Reduces call hold times, and
✓ Decreases call abandonment rates

The benefits of speech self-service extend far beyond the measurable financials that are required to obtain investment approval. Enterprises that implement speech systems should expect to see improvements in employee satisfaction, as agent burnout and turnover decrease and repetitive inquiries are offloaded to automated systems. Companies will also see an improvement in customer satisfaction, particularly if the company has speech-enabled a touch-tone based IVR application.

2.0   Review of Literature

Consider some of the unique advantages of voice technology [3]

- **Spatial freedom** – Voice technology precludes the need for a desk or a keyboard. Using a smartphone equipped with a speech processing app, you don't even need a chair. Let's say you've just concluded a business dinner at 9 p.m. Which is more efficient and productive: waiting until getting into the office the next morning to type follow-up notes and messages, or dictating a few words while leaving the restaurant that instantly reach a secretary or correctionist?

- **Greater productivity** – Studies show that people speak seven times faster than they type—including those who type proficiently. When professionals get into the swing of using speech processing, their productivity soars.
- **Faster response time, greater accuracy** – When sales reps record notes after each customer visit, they can quickly enlist back-office assistance so clients receive follow-up email or contracts in minutes, not the next day. And by dictating immediately after the visit, the rep's notes are fresh and accurate. They are far more reliable than notes typed at the end of a long day filled with multiple client meetings.
- **Improved workflow** – Imagine an American attorney pursuing a deal in Amsterdam, with office support back in Boston. When the attorney wraps up her meeting at 5 p.m., she can dictate instructions for her support staff to send examples of similar deals to her Dutch hosts. Because it's 11 a.m. in Boston— and because this attorney didn't waste time trying to peck out an email—the prospects in Amsterdam get the follow-up file within minutes…and are duly impressed.

Perhaps one of the best advantages of voice technology is that its use is not limited to only a select few professions. Speech processing already is increasing efficiency in many fields of business. Here are a few real-life examples:
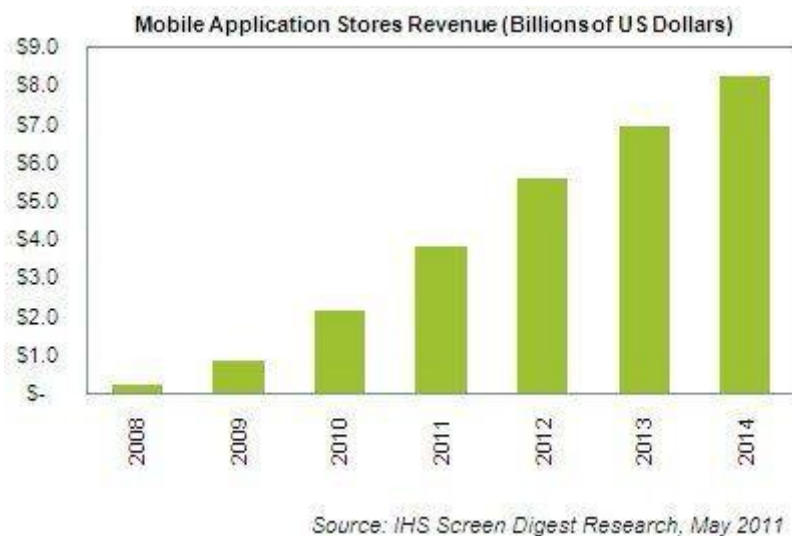
Cost reduction areas
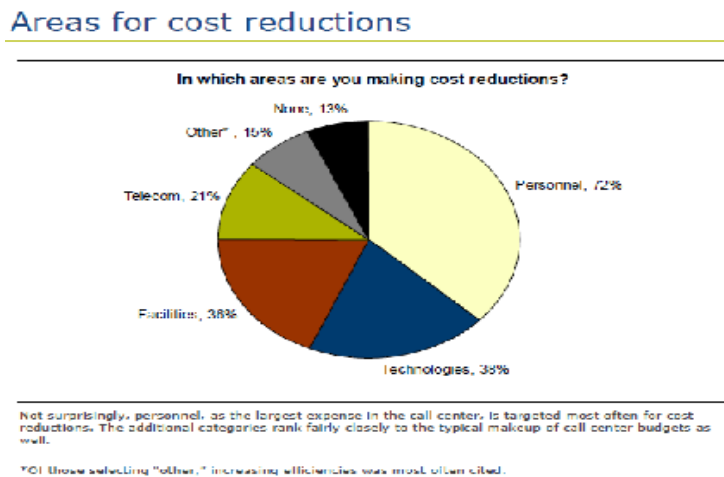
Fig-1: Cost Reduction areas [5]

According to Gartner Group, a typical service call costs $5.50, as compared to $0.45 for a call handled by an IVR. Companies that use speech recognition will

improve service quality and enhance the customer experience while reducing costs, giving them a distinct competitive advantage.

Fig-2: Mobile Applications Revenue [6]

According to IHS-owned market research firm iSuppli, revenues from major mobile app stores will grow 77.7% to $3.8 billion this year.

Constrains prevail in using agents and IVR being solved and efficient and effective call center operations are emerging to happen. [7],[8].

METHODOLGY

Based on interviews with hundreds of contact centers over the past seven years, aims to quantify the multichannel nature of customer contact. After showing where the industry has come from, and currently is, some of the business drivers and customer requirements for new and existing channels will be explored, and a view of where multichannel customer contact will be in 2015 will be given.

The study might accomplish the specific area of Operations are
- *Inbound Interactions by channel 2007*
- *Inbound Interactions by channel 2011*
- Customer experience of email and text chat channels
- *Views on how inbound channel are changing 2012*
- Proportion of inbound interactions (with 2015 estimate)

Even in the past few years, the channels through which customers contact businesses have changed considerably. The following diagram shows that in 2007, telephony was very much the primary method through which customers chose to deal

with businesses, with over ¾ of the inbound traffic to contact centers directed to voice agents.

Telephony self-service accounted for 6.9% of interactions, with the same figure for email. Letters and fax were over 5% of inbound interactions and text chat was only 1.2%.
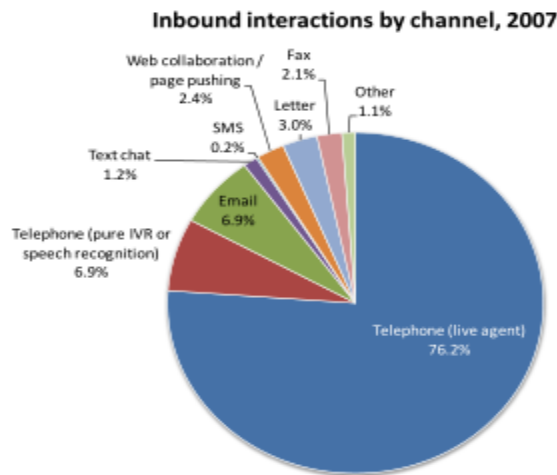
Fig-3: Inbound Interactions by channel – 2007. [6]

By 2011, the picture was somewhat different. Telephony calls made to human agents had dropped to only 71.6% but this difference had been made up by the growth in voice self-service calls, to touchtone IVR and speech recognition systems.

Email too had jumped to over 10%, with letters and fax declining correspondingly. Web chat, although still relatively low, showed significant growth.
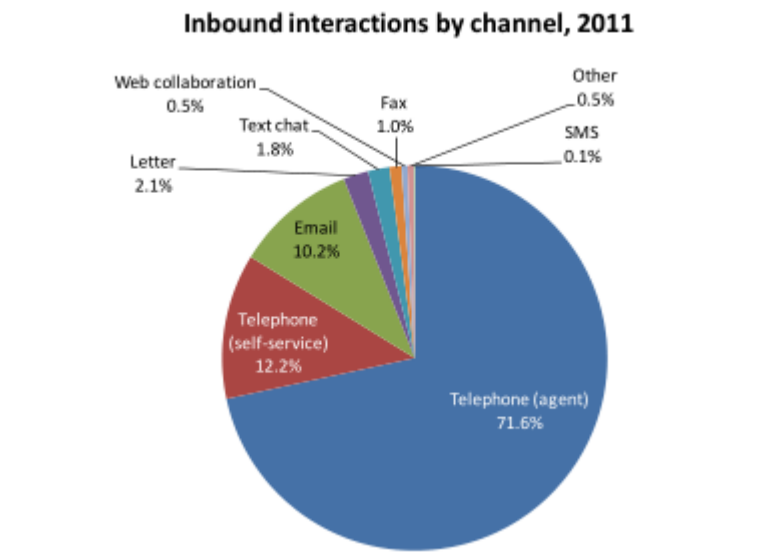
Fig-4: Inbound Interactions by channel – 2011. [6]

Successful channel uptake is generally an iterative process. Businesses introduce a channel (usually based upon it being cheaper to support than the incumbent channels), and customers trial it. If it works for all concerned, it can be deemed successful. However, it's more likely that customers trial it and reject it, either vehemently or simply by reverting to the existing, well-known methods of contact. In such cases, businesses have to consider whether to drop the channel quietly or amend it so that it meets the needs of the customer, who will then retry it and make their decision accordingly.

This can be seen in the relative uptake of two channels, email and text chat, over the past four years.

Email, which has been around as a major customer channel for well over a decade, was offered by 75% of businesses in 2007 and 80% in 2011. Text chat on the other hand was offered by only 11% of businesses in 2007, but grew to 29% by 2011.[6]

On the face of it, text chat looks to have been the more successful in the past few years. However, when we consider the volume of interactions of each channel – that is, the success of each with the customers – the picture changes. From 2007 to 2011, email saw an increase of 7% in the number of businesses using it (from 75% to 80%), but the proportion of contacts that were through email rose by 48% (from 6.9% to 10.2%). In the same timeframe, text chat uptake by businesses increased by 163% (from 11% to 29%), whereas usage by customers rose only 50% (from 1.2% to 1.8%).[6]. This indicates that the take-up of text chat by customers is behind that of businesses. Email on the other hand, hardly changed its penetration into businesses, but customers were keener to use it more frequently. This suggests that email is a Stage IV of adoption (widespread customer uptake after business improvement) and that text chat is probably at Stage II (customer trial after initial implementation).

It is interesting to note that social media does not fit this suggested model, being driven far more often by the customer than the business. Reasons for this will be explored later in this paper, but this is a good point to emphasize that without customer support, no channel can possibly succeed.

As the following diagram shows, the perceived effectiveness of email has risen as companies have invested more time and effort into answering emails quickly and effectively. In 2007, 34% of emails were answered the same working day, which rose to 74% in 2011, a clear encouragement to customers to use the channel more frequently, which they have done.
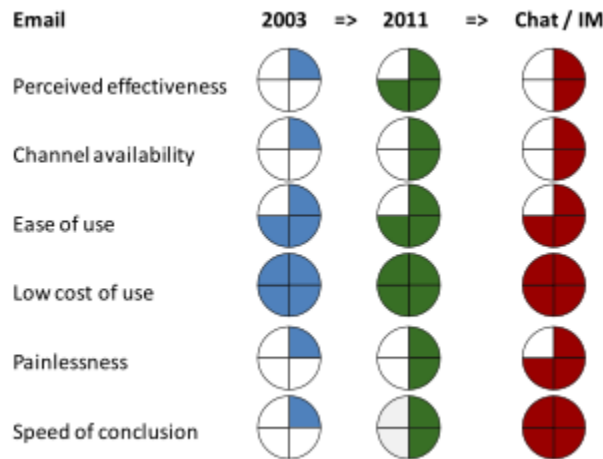
Fig-5: Customer experience of email and text chat channels [6]

A case can be made for the future rise of text chat at the expense of email. From a customer's perspective, the near real-time response of text chat is far superior to even the best email response rates (i.e. less than one hour). This speed also means that a 2-way conversation is possible, with clarification and multiple questions being available in the same way that happens in a phone conversation (albeit more slowly). Customer identity verification is also in theory possible; although, the reality may be that some customers do not feel secure enough to divulge password or personal information online.

Text chat's perceived effectiveness is still not as great as email's, due in large part to the unfamiliarity of the new channel to many customers, rather than anything intrinsically less effective about text chat than email. Contact center managers' views on how channels are changing show a serious decline in letters and fax, with quite sharp growth expected in email and text chat. Social media is also expected to grow quickly, with both live and self-service telephony expected to grow but at a slower pace.
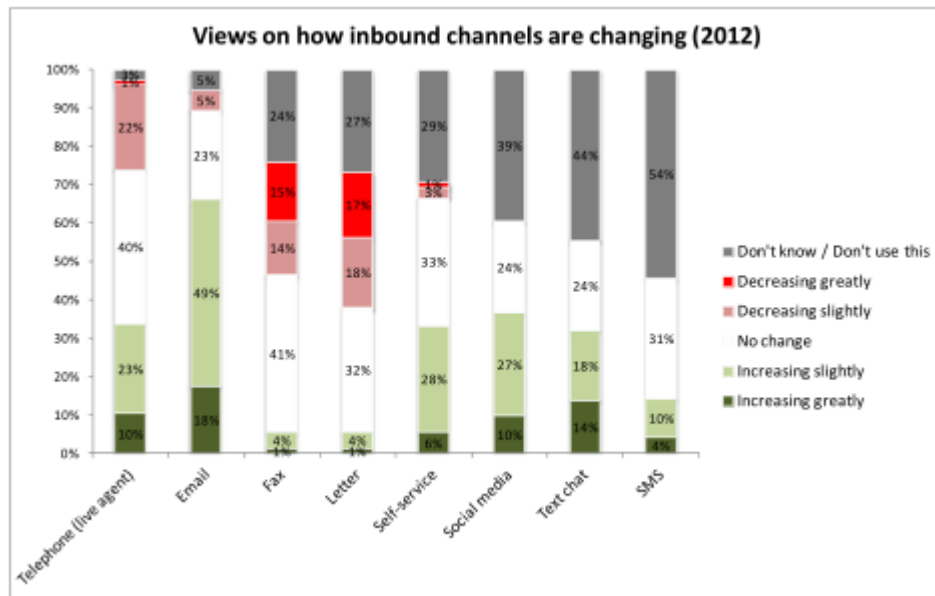
Fig-6: Views on how inbound channels are changing (2012) [5]

Email

Year	% which are emails
2007	6.9%
2011	10.2%
2015	12.2%

Fig-7: Proportion of inbound interactions (with 2015 estimate) [6]

Email is the first of the 'multimedia' channels, and by far the well-used, having been mainstream for well over 10 years. Although its penetration rate of over 10% makes it a relative success, this should be placed in the context of the expectations of contact center managers who in a 1998 survey, confidently expected email to account for 25% of inbound traffic. Email should stand as a salutary lesson that it is not businesses that make new channels a success, but customers. Put bluntly, email in its first, Stage I incarnation, failed almost entirely. Too many businesses rushed to push customers to this new channel – commonly supposed to be cheaper than voice – without having the processes, solutions or staff to manage this properly. What happened next can be understood as a 'herd inoculation' – enough customers had enough bad experiences from enough organizations that the entire channel was discredited, even for those businesses which were providing a reasonable service through email or even just keeping a watching brief.

CONCULSION AND DISCUSSION

The reason for this rejection was the appalling level of service provided by many of the early multimedia businesses. With response times stretching into many days, if not weeks, the companies failed to understand that any communication with the business has a degree of urgency to it, why else would they be trying to speak with the business? Of course, even when a response was eventually provided, the issue might have gone away, or been dealt with by calling the contact center, meaning that customers' existing confidence in the voice channel was further reinforced at the expense of the email channel. It took many years, much investment and the coaxing of customers to try new channels again for email to emerge in Stage III as a credible channel.

Of course, businesses and customers now both realize that email is more suitable for some interaction types than others (the rise of web self-service has meant email is no longer the only online communication method available), and complex issues such as complaints, or other enquiries requiring a formal paper trail are well-suited to email. In fact, much of the demise in the letter and fax as channels can be traced to a direct replacement by email. Email is an excellent outbound channel, providing reassurance, great levels of detail and being able to link to other specific areas of information via hyperlinks. As an inbound channel, it has inherent weaknesses: an inability to carry out customer authentication and to carry out a 2-way conversation being amongst them, as well as the lengthy wait to get a response. It is also not a particularly cheap channel for businesses to support. As such, it is unlikely that it will ever rise a great deal above around 12% of inbound interactions, and is likely in the longer-term to be superseded to some extent by more immediate online channels such as text chat and video agents integrated with speech recognition samples.

Benefits: The perceived effectiveness of the channel, Channel availability, Ease of use, Painlessness, Speed of conclusion, Low cost of use, Return of Investment within 12-18 months [4]

Further study is focused on
- To trace the socio-economic background of the Call Centers
- To study the Cost reduction strategies using speech technology
- To analyze the impact of the speech technology in Call Centers
- To identify the problems hindering the growth of Call Centers and to offer suggestions.

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