



Sharing knowledge.

Measuring Staff Productivity Loss relating to Knowledge Management in Contact Centres

Research Excerpt

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Foreword

Knowledge Management (KM) is recognised as crucial to running effective contact centres and yet justifying the technology investment to deliver increased knowledge based efficiencies and service quality is a challenge for industry members.

The authors of this research sought to develop an approach for accurately predicting Return on Investment (ROI) for strategic KM implementation within a Contact Centre.

A unique, simple and rapid process was developed to accurately capture the data from a large sample of calls, needed to;

1. analyse the various knowledge sources available to the Contact Centre Advisors (CCA); and
2. measure the time delays incurred by CCA's while accessing and delivering the knowledge required to accurately respond to enquiries.

This data was then used to identify knowledge related Productivity Loss Factors (PLF's) and therefore where efficiency gains are available.

Savings were measured based on the average salary of the CCA's and against the average Advisor Cost Per Minute, (ACPM).

These findings and the tools developed to conduct the study have paved the way for reducing the pre-implementation challenge of establishing a solid business case for KM led initiatives.

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Background and Summary of Results

Prior experience of the researchers indicated that post implementation reviews of KM projects recorded significant productivity and quality improvements. These improvements therefore provided the impetus to develop the ROI model to establish a solid business case for KM implementation.

Two productivity loss factors measured were;

1. the reliance on a co-worker through escalations; and
2. when information was challenging to find in their existing document repository

This was combined with a calculated 'efficiency gain potential' figure, which could be achieved if tacit knowledge and self made notes could easily be made available to all agents by a modest increase of 5%.

For 124 advisors the potential improvement is:

| | |
|--|----------------------------|
| Escalation double ups: | \$ 433,428 |
| Existing document repository (challenging to find): | \$ 90,206 |
| Additional 5% of calls handled using tacit knowledge & self-made Notes | \$189,068 |
| Total Annual Efficiency Gain Potential | <u>\$712,702.00</u> |

This result is equivalent to:

1. The productivity of 14.24 advisors pa or 11.5% of staff; or
2. \$5, 747.00 per FTE pa
3. The productivity output of 3,535 eight hour days pa

The Research Environment

This study examined the use of knowledge in a large Federal Government agency with 124 FTE in its Contact Centre.

Research was conducted and data gathered from contact centres in Sydney, Brisbane, Melbourne and Perth. The researchers worked with nearly half the Full Time Employees (FTE) in the contact centres.

The research environment is differentiated from more typical contact centres because the bulk of calls into the Contact Centre are once-off point-in-time enquiries from essentially anonymous enquirers, meaning the caller has no ongoing customer profile.

This then means there is very little process for the customer service staff to follow in relation to an enquiry, no account profile or associated attributes, no cross-sell opportunities or profile adjustments, and little if any follow-up.

The researchers believe the results of this study, if performed in the private sector, would produce even greater returns and will test this theory in future research.

Defining Knowledge

When a person calls a professional contact centre for service, the expectation is that the information returned to them is accurate, based on the knowledge of the CCA.

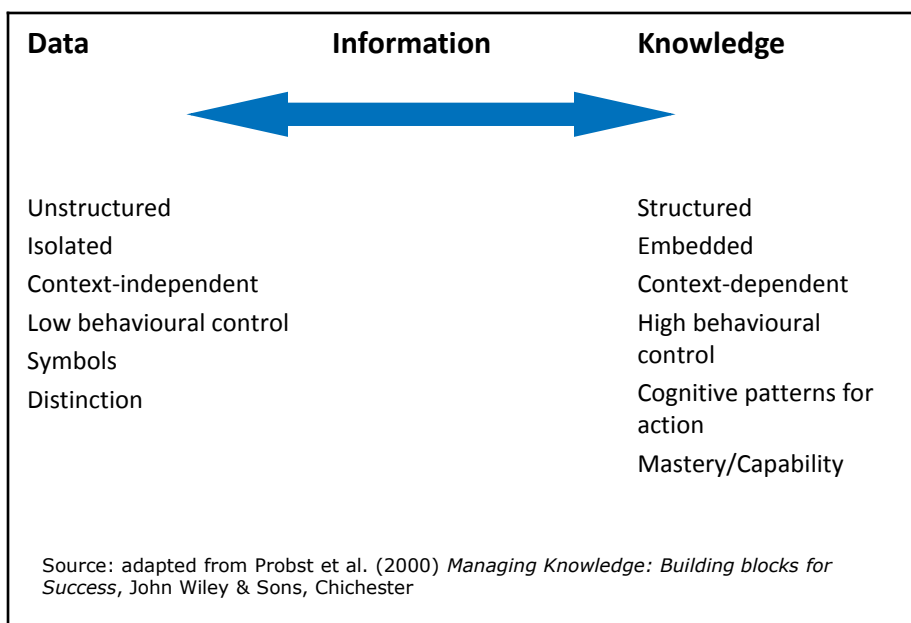
It is important to distinguish the difference between data, information and knowledge which is not always understood.

Data: *is an ordered sequence of given items or events.*

Information: *is a context based arrangement of items where there are logical relations between them.*

Knowledge: *is the judgment of the significance of events and items, which form a particular context or theory.*

Knowledge Management is about finding ways to capture and share the learning's (insights & experiences) of people in collaborative and potentially geographically dispersed working environments



Defining Knowledge Gaps and Productivity Loss Factors

The following factors are recognised as producing gaps that waste time and reduce productivity:

- Doubling up on customer requests incurs the Productivity Loss for two staff rather than one:
 - Asking for help from a co-worker
 - Escalating calls where specialist knowledge is required but is not documented or readily accessible
- Searching for information from multiple sources
- In cases where CCO's do not know how or where to search for information that is available
- In cases where CCO's know where to search, but where the data is hard to locate through available sources.
- Lack of understanding of processes and procedures: customer enquiry driven and back office related tasks *
 - * No data collected in this research therefore not included in results

Hypothesis

Contact centre knowledge management requirements are often distinct from other parts of an organisation because the customer expectation is one of fast service and 100% accurate responses.

Therefore the way raw data is collected by CCA's, understood to be the correct information and then delivered as knowledge, is directly related to knowledge efficiency and productivity in a contact centre. Measuring how many different sources of data were being used to gather information to then form the knowledge needed to respond quickly and accurately is key to identifying areas for improvement.

The hypothesis was that if a CCA is relying on unstructured, isolated and context-independent data sources to form knowledge, then the resulting Productivity Loss would be clearly identifiable and quantifiable.

Business Challenges

A contact centre is confronted with a number of considerable challenges:

- Potentially wide range of customer enquiries
- Legal accountability for information provided to customers
- Customers expect 'instant' answers to questions
- High stress work environment for call centre operators
- High staff turnover
- Large and complex body of knowledge to be learned by new staff
- Constant pressure to reduce call handling times
- Continuous tracking and assessment of efficiency measures

James Robertson, *Knowledge Management for Call Centres* 2002

Barriers to Innovation

To address challenges and to progress, businesses need to innovate. In the contact centre environment, innovation can be hindered by:

Time Constraints – Contact Centre decision makers find it challenging to initiate long-term strategic initiatives because of the number of immediate issues they need to address day-to-day. Knowledge Management is often only understood at theoretical level even by highly experienced management professionals. To implement it at the practical level needed a Contact Centre requires a strategic approach.

Resource Availability – Due to high staff attrition and the hectic nature of a typical contact centre, management can not readily take key people off their existing tasks and re-focus them on initiatives that might not return relatively immediate benefits (3-6months).

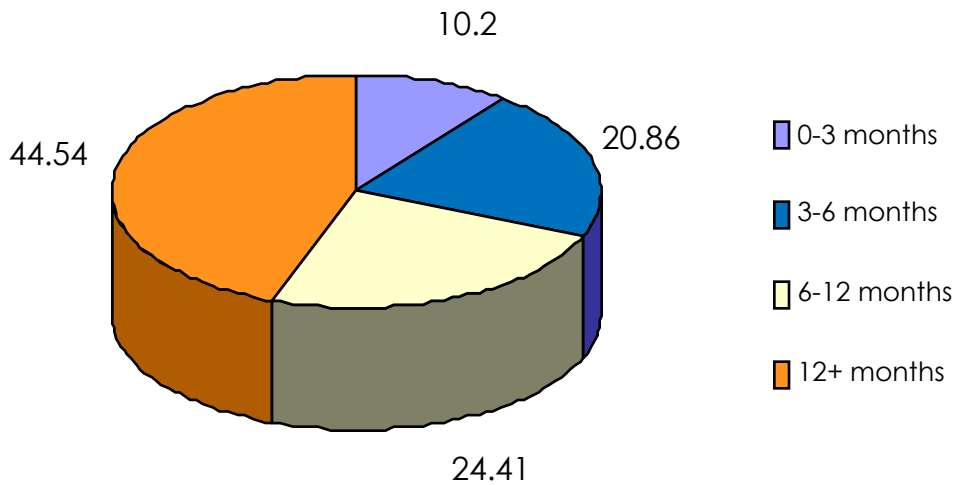
Financial Limitations – Contact Centres tend to receive tight operating budget allocations which are not always commensurate with the constantly improving productivity and results expected of them. While the future benefits of implementing strategic initiatives that are technology based may be clear to them, they often don't have time to produce the appropriate business case and cost justification to move forward.

Research Participants

During the analysis, 50 CCA's (out of 124 FTE) participated in logging a total of 1,520 calls out of a total of 9,840 over a three-day period. This represented 15.45% of total contacts.

The following chart represents the total percentage of calls handled based on CCA experience levels.

Advisor Experience



Data Capture

The study involved the development of a unique, web based data collection portal known as the Knowledge Gap Portal (KGP)

Data was entered into the portal by agents as they responded to calls. The entries involved selecting responses to a number of set questions.

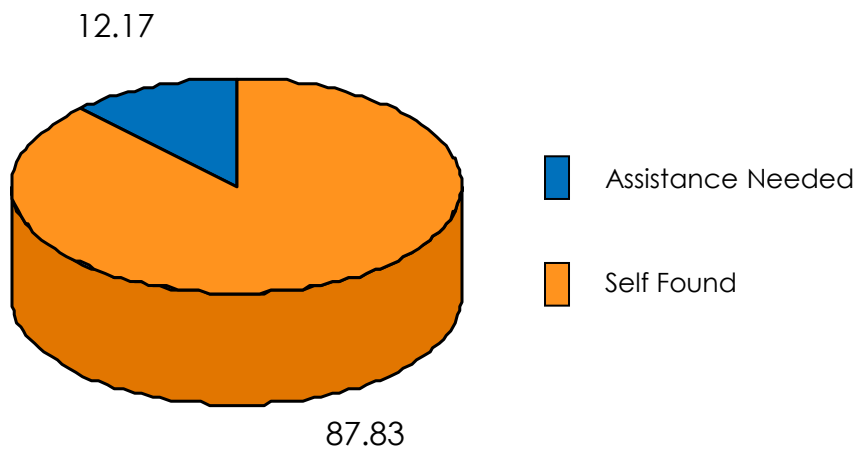
The KGP was designed to be non-intrusive, to take minimal time to use and to produce instant results.

The structure of the portal was developed in collaboration with the contact centre team-leaders in order to accurately reflect how and where CSA's go for information during calls.

Call Information

For each call answered, information was either 'self found' using what was available to, or created by, the advisor; or by requesting assistance from a co-worker; or by escalating to a senior advisor.

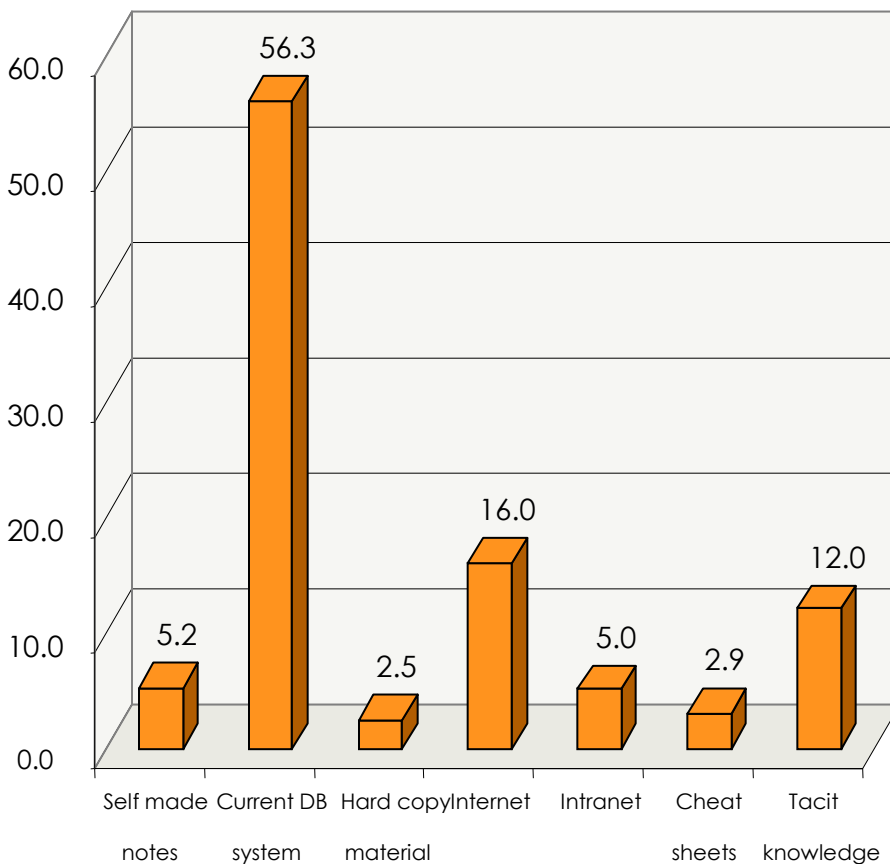
Self Found Or Assistance Needed



Self Found

From the self-found information, the data sources were identified in the locations depicted below.

The lowest times recorded for responding to a call and resolving it are connected to the use of self made notes and tacit knowledge. Tacit knowledge is very valuable, but is harder to share, because people often don't know they have this knowledge until they call on it.



Average Handling Times (Min)

Self Made Notes: 2.58

Current DB System: 6.57

- if difficult to find: 11

Hard Copy Material: 6.6

Internet: 6.2

Tacit Knowledge: 3.51

NB: Internet use equated to the use of a minimum 8 different authorised websites.

Assisted Responses

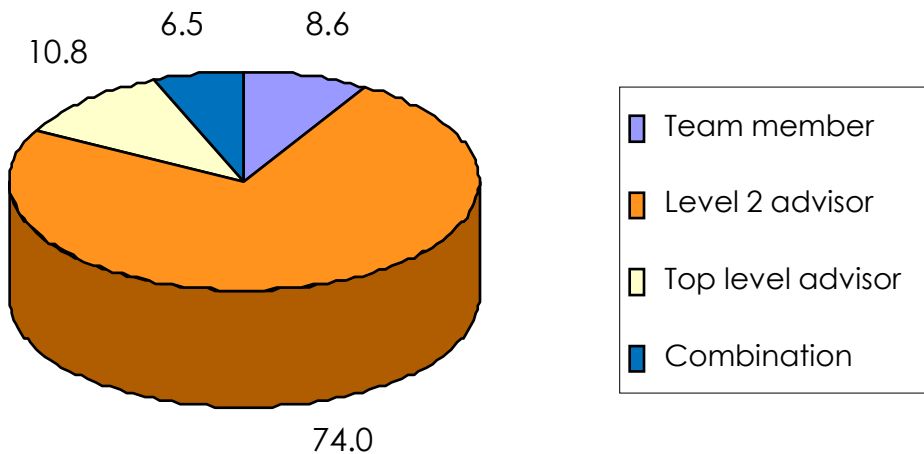
The highest call times were recorded where data on the existing document repository was difficult or challenging to find. For the percentage of calls that required assistance for resolution, the majority were via escalation to a Level 2 Advisor, meaning there are two people working on resolution. This is seen as a knowledge related Productivity Loss Factor (PLF).

The Average Productivity Loss per assisted call was 5.14 min's x 2 staff = 10.24 min's

Assistance Location

Average Handling Time (minutes)

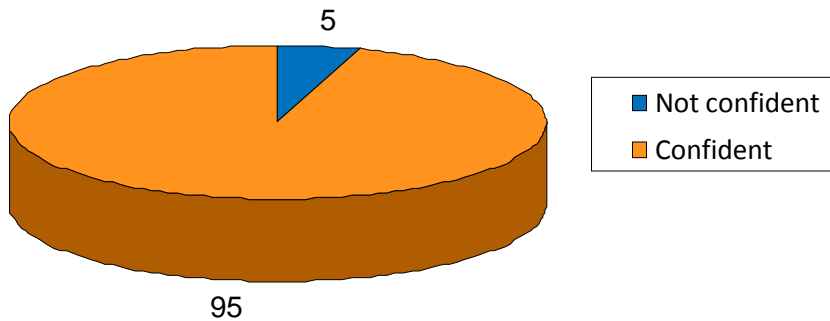
Assisted Responses: 10.14 mins



Advisor Confidence

This graph represents 3,300 calls per month where the advisor is not confident in their responses, which directly correlates to inaccurate answers, call backs, complaints. These all indicate problems with 1st call resolution.

100% Sure Advisor Provided The Correct Answer



Productivity Loss Factors (PLF)

Productivity Loss Factor (PLF) analysis is based on call ‘interruptions’ incurred as a result of an operator not knowing specific or generalist types of information. As a result, the operator requests the information from a co-worker, thereby inducing a PLF for two staff, not just one. The following Key Statistics were used to determine the fiscal cost of productivity loss for the contact centre:

| Key Statistics | |
|--------------------------------|-------------|
| Total Call Times – October | 504,301.120 |
| Total Calls October | 66,008.000 |
| AHT non-escalated calls | 7.640 |
| AHT escalated calls | 10.14 |
| Average calls per day | 3,300.000 |
| Average Advisor Salary p.a | \$50,537.00 |
| Advisor Cost Per Minute (ACPM) | \$0.42 |

PLF – Escalations and Double-Ups

The analysis showed that 12.17% of all calls required assistance from a co-worker with an average handling time of 10.14 minutes. The General Manager of the national Contact Centre advised that the average call is escalated by the 5th minute.

To measure the amount of time lost the researchers calculated the difference between the average point of escalation (5mins) and the AHT for escalated calls (10.14 min's). This value of 5.14 minutes was then doubled due to the efforts of 2 staff working on the same issue. This is then reflected in calculations as the Productivity Loss Gap (PLG).

| Key Statistics | |
|---|---------------------|
| Average Advisor Salary p.a | \$50,537.00 |
| Agent Cost Per Minute (ACPM) | \$0.42 |
| Average Contacts per day in October | 3,300.00 |
| Percentage of calls requiring assistance per day | 12.17% |
| Assisted Calls Per Day (ACPD) | 402 |
| Productivity Loss Gap (PLG) - minutes per call | 5.14 |
| Productivity Loss Gap Escalated (PLGE) - minutes per call for 2 staff | 10.28 |
| Days per month | 20.83 |
| PLGE - min's per day | 4,128.55, |
| Agent Productivity Loss (APL) per month - minutes | 85,997.71 |
| Monthly Productivity Loss (MPL) | \$36,119.04 |
| Annual Productivity Loss (APL) - MPL x 12 | \$433,428.47 |
| Number of FTE | 124 |
| Average \$PLG per Advisor | \$3,495.39 |
| Average %PLG per Advisor | 6.92% |

Existing Document Repository System

87.83% of calls were resolved with self found information. In 56.3% of those calls (1,616 calls) the existing document repository was used. This system was identified by team leaders as difficult for Advisors so therefore statistics on usage were requested.

12% of calls using this system were deemed by Advisors as “challenging to use” with an AHT of 11 minutes. The remainder had an AHT of 6.57 minutes.

The researchers conservatively valued only the gap between DB Searches and Challenging DB Searches to determine a PLG resulting from use of the existing document repository.

PLG = 4.43 minutes 11min AHT for challenging search – 6.57min AHT for easy search

| Key Statistics | |
|--|--------------------|
| Average Contacts per day in October | 3,300 |
| Challenging searches per day | 193.96 |
| PLG for Challenging Doc Repository searches | 4.43 minutes |
| PLG x Challenging Doc Repository searches | 859 minutes |
| Agent Productivity Loss (APL) = PLG x CBDS x ACPM days/month | 17,898 minutes |
| APL x ACPM (\$0.42) = Monthly Productivity Loss (MPL) | \$17, 878 |
| MPL x 12 = Annual Productivity Loss (APL) | \$90,206 pa |

Tacit Knowledge and Self Made Notes

It was found that tacit knowledge accounts for approximately 10.53% and self made notes accounted for 4.54%, of all calls.

It was identified that the most efficient responses to calls and those with the lowest AHT came from these two methods. Tacit Knowledge resulted in an AHT of 3.51 minutes and Self Made Notes had an AHT of 2.58 minutes.

Both these times are well below the average handling time for the full month of October, which was 8.39 minutes.

Based on the theory THAT.....“The implementation of a knowledge management solution will both; 1) enable the contact centre to better capture and share tacit knowledge and self made notes across all CSA’s; and 2) Improve CCA knowledge retention; therefore the outcome will be an increase in the percentage of calls handled by these methods”

THEN the following potential productivity gains are achievable

| | Call Handling Method | |
|----------------------------------|----------------------|---------------|
| | Tacit | Notes |
| AHT minutes | 3.51 | 2.58 |
| Percentage of total calls | 10.53% | 4.54% |
| Calls per day | 363 | 150 |
| Minutes / Day | 1,274.13 | 387.00 |
| Days / month | 20.83 | 20.83 |
| Mins / Month | 26,540.13 | 8,061.21 |
| Mins / Annum | 318,481.53 | 96,734.52 |
| Cost per Minute | \$0.42 | \$0.42 |
| Total Cost Per Annum | \$133,762.24 | \$40,628.50 |

Tacit Knowledge and Self Made Notes

| Productivity Improvement for calls handled using tacit knowledge or self made notes | | | |
|---|---------------------|--------------------|---------------------|
| | Tacit | Notes | Total |
| AHT minutes - All Calls | 3.51 | 2.58 | |
| AHT for Oct | 8.39 | 8.39 | |
| Time saved per call in minutes | 4.88 | 5.81 | |
| Time saved per day in minutes | 1,771.44 | 871.50 | |
| Time saved per month in minutes | 36,899.10 | 18,153.35 | |
| Time Saved per Year in minutes | 442,789.14 | 217,840.14 | |
| Total productivity gain per annum | \$185,971.44 | \$91,492.86 | \$277,464.30 |

| Potential productivity improvements by increasing call handling method for the two most efficient sources of knowledge | | | | |
|--|----------------------|----------------------|----------------------|-------------------|
| | Current | 5% increase | 10% increase | 15% increase |
| <u>Tacit</u> | | | | |
| Percentage of total calls | 10.53% | 14.94% | 19.94% | 24.94% |
| Productivity gain per annum | 185,971.44 | 274,276.97 | 362,582.49 | 450,888.01 |
| <u>Self made notes</u> | | | | |
| Percentage of total calls | 4.54% | 9.54% | 12.58% | 17.58% |
| Productivity gain per annum | 91,492.86 | 192,255.92 | 253,519.86 | 354,282.92 |
| TOTAL productivity per annum | \$ 277,464.30 | \$ 466,532.89 | \$ 616,102.35 | 805,170.93 |
| Potential productivity gain per annum | | \$ 189,068.59 | \$ 338,638.05 | |

Efficiency Gain Potential (EGP)

By combining the Annual Productivity Loss (APL) created through escalations and double ups with the APL generated by reducing challenging uses of the existing document repository, a Total Annual Productivity Loss is identified.

The researchers were then able to use this figure to identify the balance between identified productivity losses and gains to determine the Efficiency Gain Potential (EGP).

For 124 advisors the potential improvement is:

| | |
|---------------------------------------|-------------------|
| Escalations and Double Ups APL: | \$ 433,428 |
| Existing Database APL: | \$ <u>90,206</u> |
| Total Annual Productivity Loss | \$ 523,634 |

If an additional 5% of all calls could be handled using tacit knowledge or self-made Notes at **\$189,068.....** THEN

Efficiency Gain Potential **\$712,702.00**

This result is equivalent to:

- 1. The productivity of 14.24 advisors pa or 11.5% of staff; or**
- 2. \$5, 747.00 per FTE pa**
- 3. The productivity output of 3,535 eight hour days pa**

Conclusions

The entry of data into the KGP and the resulting analysis has helped to establish a fast, robust and efficient method for tracking the use and value of knowledge in a contact centre, and accurately measuring the cost of its absence.

The data collection was managed without any affect on customer service levels.

Such a framework has the ability to overcome the hurdles of time, resource and financial limitations, the things industry members articulate as those that stifle the ability to innovate, both; with new technology and to overcome widely recognised business challenges.

The research clearly identified that CCA's in the Government agency were using unstructured, isolated and context-independent data sources, which was interpreted and then presented as knowledge to enquirers. These methods provide no way to promote sharing of knowledge and knowledge reuse.

The researchers were able to demonstrate to the test client that implementing new technology would produce a substantial ROI, as measured against defined areas of productivity loss and gain, within months. This was possible even using the most conservative of calculations, as outlined in this document.

Recognising the nature of call types into this contact centre, it would be reasonable to expect a far greater ROI result in other more typical contact Centres.

Future Research Focus

Due to the nature of calls into the contact centre analysed in this research, this analysis excluded the measurement of CCA processes & procedures e.g. call handling, customer enquiry driven tasks or back office related tasks. This represents an opportunity for future commercial research to measure process related Productivity Losses due to knowledge gaps and the resulting ROI possibilities.

The authors of this research have developed a proven method for conducting contact centre analysis with a focus on measuring gaps in process and procedural knowledge of CCA's.

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Note: This excerpt only focused on a limited number of measurable factors, factors where time and financial values can be practically related and accurately calculated. There are many other benefits the authors have previously measured post KM implementation. Improvements such as;

- customer satisfaction
- service quality, accuracy & consistency
- staff empowerment & user satisfaction
- induction & training time reduction
- risk & compliance audit information
- KPI management