

SPECIAL THREE (3) POINT COURTROOM VIDEOCONFERENCING TRIAL: DESIGN AND CASE STUDY SUMMARY

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Introduction

The videoconferencing trial designed, fielded and evaluated the conduct of Office of the Umpire Hearings by use of videoconferencing. The Office of the Umpire is a Canadian Federal judicial body dealing with employment insurance appeals and presided by Federal Court Judges. The project included a four (4) month trial followed by an evaluation conducted during the winter of 1996/97 with the purpose of determining the degree of usability and cost benefit to be derived from the application of videoconferencing technology to Umpire Hearings.

Working with the Steering Committee, the organizational goals were established. The Hearing process was also keenly observed and its tasks and the users' needs were determined.

Once the goals, the tasks and the users' needs were clearly established and understood, a Special Three (3) Point Hearing was designed that duplicated the court room environment and **did not use a multi-point bridge**. This new design

allowed for the maintenance of eye contact and human relationship among all parties while maintaining the decorum and procedures of the traditional Hearing.

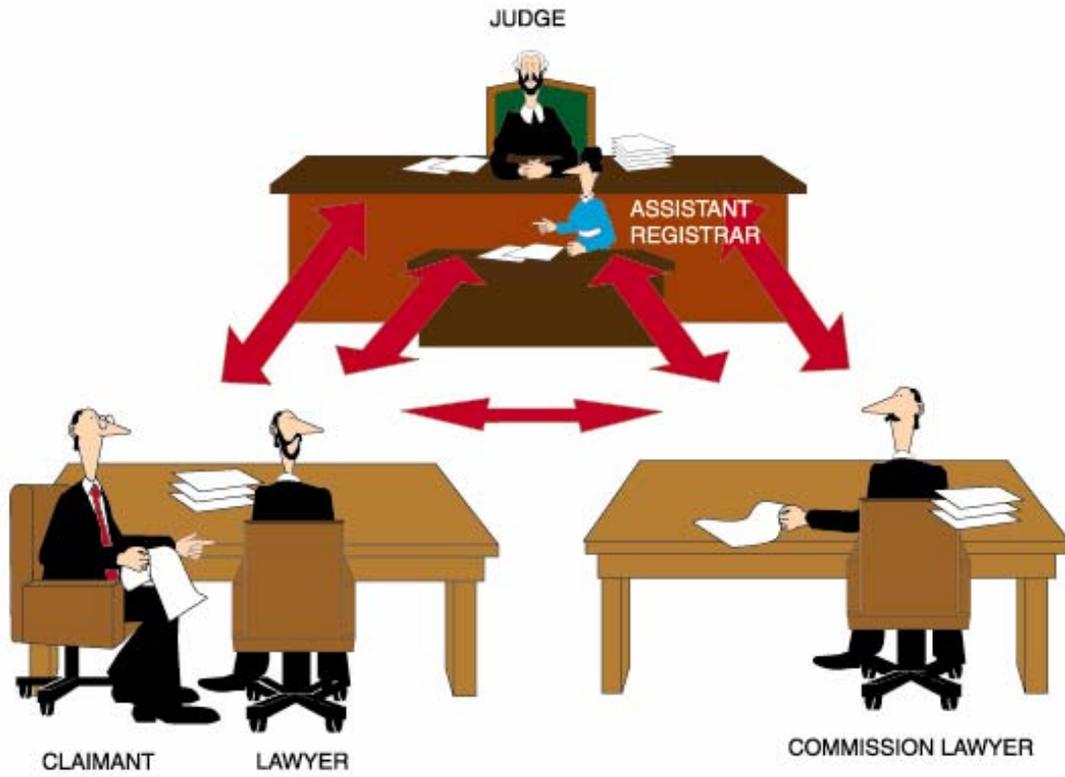
Traditional Hearing Process

In the traditional process, everyone hears and sees everyone else. There are no side conversations and there are no confidential conversations. Please see *Figure 1*. The claimant may or may not be accompanied by a lawyer. There is also an exchange of hard copy printed material which at times can be significant. There is a public gallery, but there is no need to feed the signal to the public at this time.

The Tasks are as Follows:

1. Assistant Registrar greets claimants and answers questions.
2. Assistant Registrar keeps Umpire informed of any changes.
3. Assistant Registrar opens Hearing.

**FIGURE 1. AUDIO AND VIDEO IN
PRESENT HEARINGS**



4. Umpire enters Hearing room.
5. Assistant Registrar calls case.
6. Appellant presents arguments including jurisprudence.
7. Respondent presents counter arguments including jurisprudence.
8. Appellant makes rebuttal.
9. Umpire makes comments or asks for clarification during the process including consultation with the Assistant Registrar.
10. Umpire closes case.
11. Steps 5 to 10 are repeated.
12. Assistant Registrar closes the Hearing.

In the present Hearing process there is the notion of foreground and background communication.

The foreground communication is the direct interaction when, for example, the Commission lawyer is addressing the Umpire.

The background communication, like peripheral vision, is the secondary communication that takes place.

In the above example, the Umpire is also aware of the Claimant and the Assistant Registrar even though the foreground communication is with the Commission lawyer.

The design incorporates foreground and background communication while maintaining social status and very

important eye contact and visual social clues.¹

Design of Videoconferencing Hearing Process

Having evaluated the goals and objectives, the tasks, and the users' profiles, two (2) designs were proposed. One design is a Special Three (3) Point Hearing, while the other is a two (2) point Hearing.

Special Three (3) Point Hearing

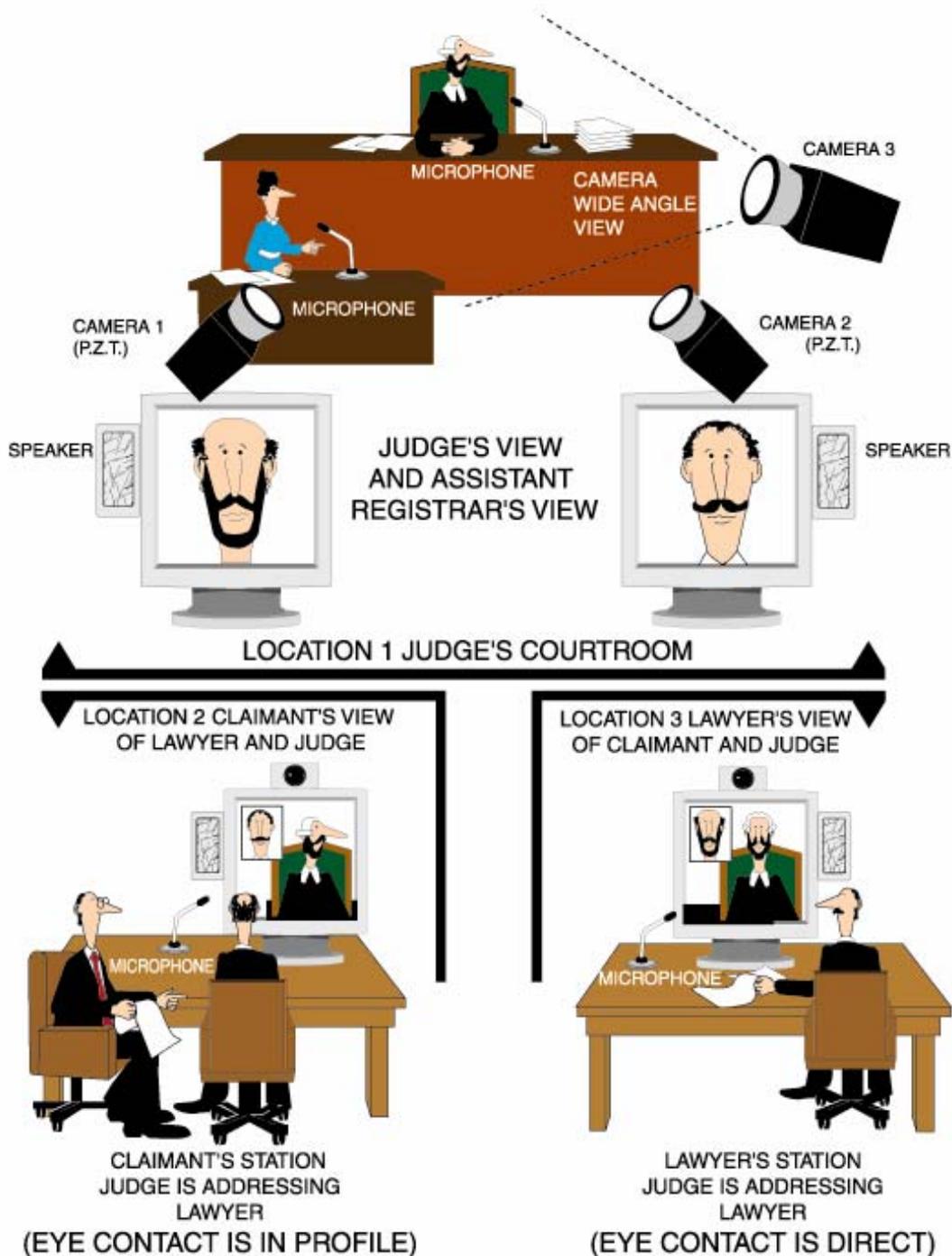
In the Special Three (3) Point Hearing, the Umpire and the Assistant Registrar are in one physical location, the Claimant is in another location, and the Commission Lawyer is in the third physical location.

All parties see and hear each other at all times and there are no side conversations or confidential conversations. Please see *Figure 2*. To maintain the notion of foreground and background, a Picture in Picture (P.I.P.) is used to show the Claimant and the Umpire to the Lawyer, and conversely, to show the Lawyer and the Umpire to the Claimant. As the Umpire has a higher status in the Hearing, the view of the Umpire is the larger picture of the P.I.P.

A second camera was installed at the Umpire's location giving a wide view of the Assistant Registrar and the Umpire.

¹ The eye contact enabled, as was repeatedly illustrated in the trial, the Umpire to nod to the lawyer or claimant as a visual sign to proceed over a distance of 5,000 miles. These visual clues, so important in real live interactions, were preserved in the videoconferencing design.

FIGURE 2. 3 POINT HEARING: USUAL VIEW



The Assistant Registrar has a toggle switch at her/his desk allowing a view of the Assistant Registrar and the Umpire. This view is used primarily at the opening and closing of the Hearing allowing the remote parties to see and hear the Assistant Registrar and see the Umpire enter and leave the Hearing. Please see *Figure 3*. It is also used when the Assistant Registrar is addressing the Hearing.

The Assistant Registrar's microphone was not toggled: only the video was toggled.

The Umpire and the Assistant Registrar have separate microphones.

The Claimant's speaker is next to his/her monitor allowing the sound to come from the same direction as the video picture. The Commission lawyer's speaker is next to his/her monitor allowing the sound to come from the same direction as the video picture. In this manner the maximum human contact is maintained.

As the Umpire enters the Hearing room and sits in his/her chair the Assistant Registrar switches to a view of the Umpire and the Hearing proceeds.

This implementation **does not** require a bridge, but requires two (2) videoconferencing stations in the Umpire's location:

- one station representing the Claimant
- one station representing the Commission lawyer

The Umpire can see the image that is being sent to the remote locations on a monitor.

The Claimant and the Commission lawyer are represented virtually on separate monitors in the Umpire's location. They also have their respective cameras allowing the Umpire to make eye contact when addressing either party.

Therefore the Umpire is facing three (3) monitors. The positioning of the participants respects their role and status in the Hearing.

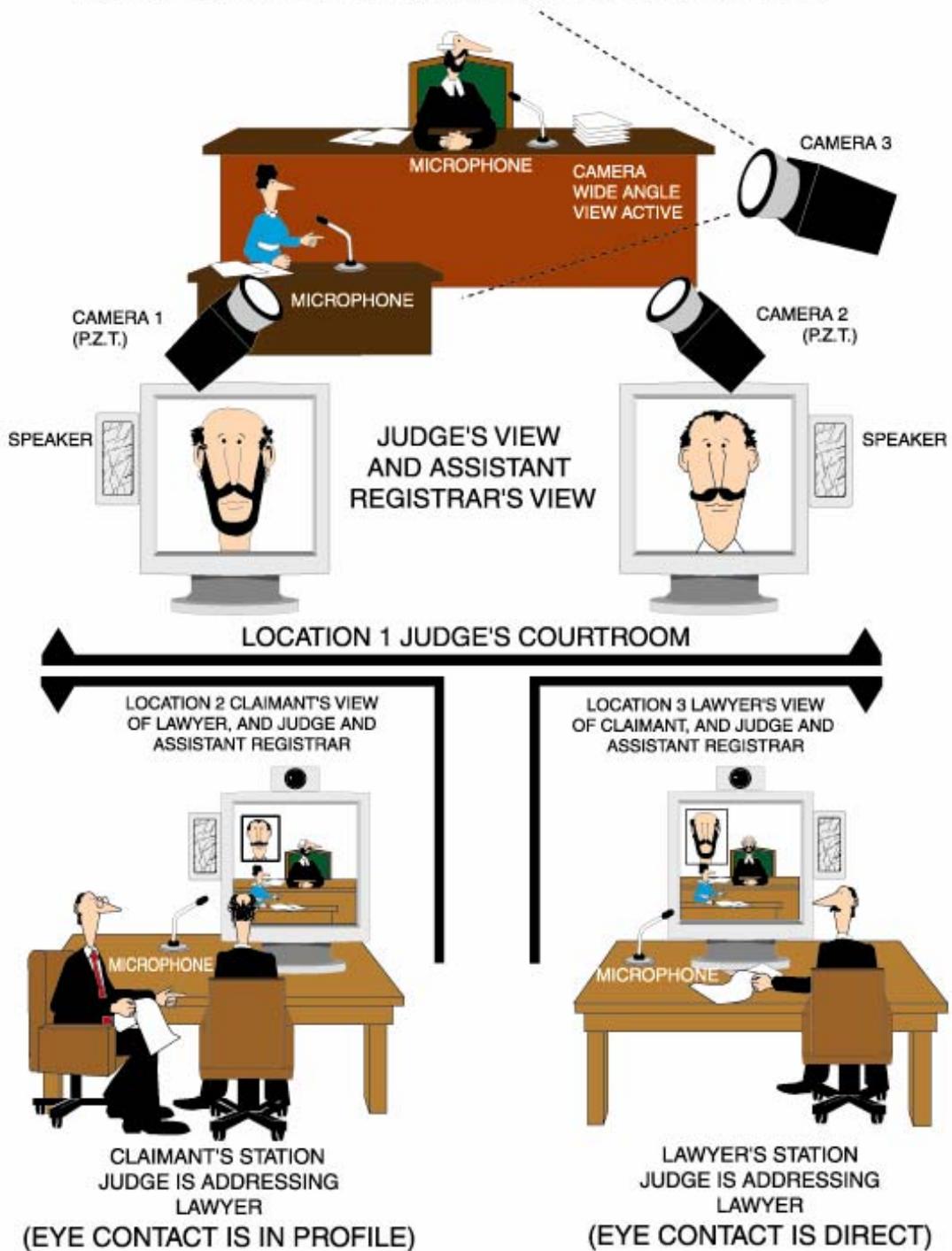
To preserve the Hearing decorum, the Claimant and the Commission lawyer are required to stand when addressing the Hearing. The cameras are positioned to allow a closer view of the speaking party and a further view of the listening party.

There are no user accessible controls except for the video toggle switch for the Assistant Registrar to allow a wide view when the judge is entering and leaving the hearing. All other controls, including speaker volume and camera angles, are adjusted prior to the Hearing.

To obtain acceptable video and audio quality, the transmission speed between stations is 384 Kbps or three (3) BRI ISDN lines. A total of twelve (12) lines is used. The codecs are equipped with inverse multiplexers allowing the use of less lines if required.

The Special Three (3) Point Hearing **does not** require a multi-point bridge. This reduces the complexity of the design and reduces the operating costs by \$ 270 per hour.

**FIGURE 3. 3 POINT HEARING:
JUDGE AND ASSISTANT REGISTRAR WIDE VIEW**



The design allows the Claimant and the lawyer to be in any physical location and use any videoconferencing system including desktop systems with no modifications. This eliminates the need for the Commission lawyers to travel.

The Special Three (3) Point Hearing does require additional equipment at the Umpire's location. As the Umpires are in Ottawa the existing Ottawa Federal Court videoconferencing room was outfitted with additional equipment to serve as the anchor site.

A two (2) point design was also produced. This design is weaker functionally than the Special Three (3) Point Hearing, and it requires the Commission lawyer to travel to the Claimant's location increasing the costs. This design was quickly rejected.

Exchange of Printed Material

Due to the volume of hard copy printed material exchanged at the Hearing, it was suggested that the hard copy information, including the jurisprudence, be circulated to all parties in advance of the Hearing date. A two (2) month lead time was suggested. As a last resort, a fax was also available in each location.

Trial Results

The existing Ottawa Federal Court room was modified with additional equipment.

A number of unusual technical difficulties were resolved. Two (2) mock

trials were held to test the equipment and procedures and six (6) actual Hearings were held.

Of the six (6) actual Hearings conducted, five (5) were successful. One Hearing, Ottawa to Nelson BC, failed and the Hearing was conducted using the back-up audio only.

Users' impressions were gathered by way of questionnaires and interviews and are presented. They were mostly very favorable.

The presentation of written material, such as jurisprudence, during the Hearings caused logistical problems. The direction had been to forward material in advance of Hearings. This was not adhered to and documents still had to be faxed during the Hearings. Therefore, a review of this procedure is necessary for implementation.

Based on the results of the trial, conducting Office of the Umpire Hearings by videoconferencing brought strategic benefits, productivity benefits and cost saving benefits while maintaining human factor relationships and court room decorum.

The strategic benefits include the ability to easily access remote areas of Canada more frequently, and the ability to conduct a larger number of Hearings, leading to a reduced back-log and faster Hearing cycles.

The productivity benefits include the reduced unproductive time for Umpires, Commission lawyers, Assistant Registrars and other court personnel traveling to remote location Hearings. As these professional resources are

scarce, increasing productivity through reduced down time will have a large organizational impact. Total productivity improvements of between 3.5 person days and 13.5 person days per Hearing held by videoconferencing were realized.

The cost saving benefits due to reduced travel can be very high when considering Hearings in remote areas such as Whitehorse. Cost savings of \$10,000 per Hearing in such areas are easily realized.

Users' impressions were gathered by way of questionnaires and interviews.

Some Highlights from Hearing participants (excluding lawyers):

- 62% of respondents indicated that compared to the traditional Hearings, the Hearing by videoconference was equally productive.
- 59% of respondents indicated that compared to the traditional Hearings, the Hearing by videoconference was less time consuming.
- 53% of respondents indicated that compared to the traditional Hearings, the Hearing by videoconference was equally formal.
- 76% of respondents indicated they were totally unfamiliar with the concept of videoconferencing.
- 84% of respondents indicated that the pre-Hearing briefing was good to excellent
- 70% of respondents indicated that they agreed or strongly agreed that they were able to make their presentation as in a traditional Hearing.

Some Highlights from Commission lawyers:

- 67% of the lawyers indicated the Hearing by videoconferencing was less time consuming.
- 67% of the lawyers disagree that they were able to present hard copy material such as jurisprudence easily and naturally.
- 100% of the lawyers indicated that compared to traditional Hearings, the Hearing by videoconference was equally formal.
- 67% indicated they were able to make presentations as in a traditional Hearing
- 67% indicated they could not gauge the reaction to their ideas from the remote site participants
- 100% of the lawyers indicated that they did not feel that there were uncomfortable pauses.
- 100% of the lawyers indicated that they did not feel that there were any awkward interruptions.
- 100% of the lawyers indicated that the pre-Hearing briefing was good.

Conclusions

At the beginning of the trial a number of organizational objectives were identified for each stakeholder. The following table examines these objectives based on the experiences gained throughout the trial. Furthermore, some conclusions and comments are derived based on a future production implementation.

The **major** objectives of providing Office of the Umpire Hearings by videoconferencing in this trial were to:

- 1) Provide an increased level of service at the same or lesser cost.
- 2) Access clients in remote areas utilizing videoconferencing.

- 3) Conserve the human factor relationship while maintaining court room decorum.

Major Objectives, Trial Results and Implementation Comments

Objective	Trial Results	Videoconferencing Implementation Comments
Provide an increased level of service at the same or lesser cost.	<p style="text-align: center;">Achieved</p> <p>A Three (3) Point Special Hearing is considerably less expensive than a traditional Hearing where travel is involved.</p> <p>Level of service is maintained or improved.</p>	<p>Scales well and proportionally.</p> <p>An increased level of service is possible due to:</p> <p>1) reduced down time associated with travel to remote areas,</p> <p>2) more Hearings are possible as a result.</p>
Access clients in remote areas utilizing videoconferencing.	<p style="text-align: center;">Achieved</p>	<p>Access to clients in remote areas can be improved.</p> <p>Some areas still do not have facilities, but this will improve with time.</p>
Conserve the human factor relationship while maintaining court room decorum.	<p style="text-align: center;">Achieved</p> <p>Claimants reacted very well to videoconferencing.</p>	<p>Positive reaction from most claimants is expected.</p>

The Special Three (3) Point system is in production use today by the Office of the Umpire and the Federal Court. The cost of the equipment was returned during the trial from the derived savings and the backlog of cases has been reduced dramatically. The Office of the Umpire is now enjoying the strategic,

productivity, and cost saving benefits of the Special Three (3) Point Hearing.

Biography and Company Experience

Videotelephony Inc. is an independent consulting and engineering company. It is vendor independent, having no financial relationships with vendors or suppliers of videoconferencing products and services. It was formed in 1989 to address the cost reductions and benefits made possible by using tools developed by the emerging videoconferencing and collaborative work industry. The company principle was engaged in Research and Development as project managers and research associates by the Ontario Telepresence Project.

The Ontario Telepresence Project was a 4 year \$5.7 million dollar international collaborative pre-competitive research project in the use and application of collaborative work using videoconferencing technology. It was based on the partnership of academic and industry researchers. The major partners were: Xerox P.A.R.C., Bell

Canada, I.B.M., Hewlett Packard, University of Toronto, University of Ottawa, Carleton University, Baden-Wurtemberg in Germany, Catalunya in Spain, Lombardia in Italy, and Rhone Alps in France. The project was sponsored by the Information Technology Research Centre (I.T.R.C.) and the Telecommunications Research Institute of Ontario (T.R.I.O.).

Other recent projects included the design, specification, training, and implementation of videoconferencing and collaborative work design solutions for many government, educational, and private sector clients.

Mr. Kozlowski is an engineer with post graduate studies in electrical engineering and multi-media telecommunications research and development. He has worked on multi-disciplinary projects in the past and can combine creative talent, business goals and objectives, and knowledge of state-of-the art technology applications to deliver exceptional solutions. He has 25 years experience working with the institutional and private sectors.