

Telepresence Robots in Government



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Organisation: Policy Horizons Canada (Horizons)

Country: Canada

Level of government: Central government

Sector: General public services

Type: Communication, Digital

Launched in: 2014

Overall development time: 4 month(s)

Link to the innovation's website

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Description

For the last two years, Horizons has been experimenting with telepresence robots (telerobots) in its innovation lab. Using a combination of widely available technologies (such as Wi-Fi, cameras, tablets, drives, apps and computers) telerobots allow individuals in alternate locations to achieve an enhanced level of “physical presence” with their work colleagues. This innovation allows communication and collaboration with remote workers at a level that is far superior to what can be achieved through other available tools for virtual presence, such as teleconference or Skype. Through a computer, users command the telerobots from remote locations to attend meetings, interact with colleagues, deliver trainings or facilitate events.

Horizons uses telerobots to connect staff from other locations and experts from across the globe with staff in Ottawa. One of Horizons' staff, who works in Montreal, uses a telerobot to participate in meetings in Ottawa, move around the office on a daily basis and make presentations. Horizons also uses telerobots to engage with remote speakers and to interview experts on policy topics. In addition to saving time and travel costs, telerobots allow the organisation to recruit talent that is not located near its main offices in Ottawa, and to contribute to ongoing efforts to reduce the ecological footprint of government operations.

Why the innovation was developed

- The original driver for use of telerobots was to improve communication and collaboration with Horizons' remote staff. Because Horizons co-creates knowledge with a wide variety of stakeholders, telerobots are now also being used with a range of stakeholders in and outside government.
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Objectives

Improve effectiveness, Improve efficiency

- The objectives include:• Improve communication and collaboration capacity within Horizons with remote staff, other public servants in the Government of Canada, and external experts around the globe.• Provide more flexibility to Horizons' remote workers.• Save time and money on travel.
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Main beneficiaries

Government bodies, Government staff, Other

- Horizons' telerobots are being used by its staff, other public servants and by external experts. In the future, Horizons may experiment with using telerobots for consultation with Canadians. The main beneficiaries are:• Horizons' staff who use the robot (enhanced job opportunities; work-life balance)• Horizons' staff from the Ottawa office (opportunity to engage with international colleagues and experts)• Horizons (less office space required; saved travel costs)• Canadians involved in consultations led by the federal government (opportunity for more meaningful engagements – please note that this aspect is still at the experimentation stage)• Canadians in general (saved public funds)
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Existing similar practices

Not available

In public administration of my country

Public Works and Government Services

Since Horizons started experimenting with telerobots, at least one other federal organization has started using telerobots (i.e. Public Works and Government Services).

<https://techcrunch.com/2016/06/18/flipping-the-office-telepresence-model>

Results

Efficiency

- The use of telerobots has allowed Horizons to improve its communication and collaboration with remote staff and stakeholders.
 - Telerobots have reduced the need for remote staff and external experts to travel to Horizons' office, resulting in savings in time and money.
 - Compared to traditional teleconference technologies used by Horizons (e.g. Skype), telerobots greatly improve the quality of interaction and the experience of remote participants.
 - someone working on a telerobots is able to move around the office to read information, have face to face discussions or participate in a small group discussion at a table. Someone participating in a meeting by teleconference or Skype does not have these capacities.
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Effectiveness

- Telerobots allow a remote worker to lead and facilitate workshops at Horizons' office.
 - The telerobots are allowing remote users to directly and personally interact with people in team meetings and take pictures of works accomplished during workshops without the help of colleagues.
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Service quality

Accessibility:

- Although it has not been used to improve accessibility at Horizons', the organisation's use of telerobots provides an example of remote collaboration that could benefit workers with limited mobility or other handicaps or challenges.

Reliability:

- After two years of constant use, Horizons is in a position to confirm that the use of telerobots is a reliable alternative to physical presence in the work place.
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Other improvements

- The use of telerobots at Horizons has made workers aware, comfortable and accepting of alternate work arrangements. Our staff will be well equipped to thrive in the work places of tomorrow (next 10 to 15 years), where telepresence will likely be the norm (see Horizons' publications on The Changing Nature of Work and the Emergence of a Knowing Society).

Development

Design

The idea originated from Horizon' staff when they were looking for a way to improve remote working. They wanted a solution that would increase communication, allow remote staff to be more visible and improve collaboration with co-workers. After research by Horizons' IT administrator and staff, they realized that experimenting with telerobots could answer many of these challenges while being cost effective.

Testing

- The test phase consisted of: piloting a telerobot through the office; testing the Wi-Fi connection within Horizons' offices; and testing the audio in group meetings. Once these parameters were validated, Horizons purchased a second telerobot to accommodate multiple remote users.
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Implementation

Tools used:

- The main technical consideration for the implementation was the fact that telerobots need constant access to a Wi-Fi connection to operate. As a result, Horizons provides Wi-Fi for wherever the telerobots need to go.

Resources used:

- Cost for each telerobot (Double Robotics) include:• Telerobot (\$3,000)• Charging station (\$250)• iPad (\$500)• Wi-Fi connection • IT support (initial setup and sporadic monthly firmware/software updates and troubleshooting)
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Challenges and solutions

- The telerobots are somewhat fragile and need to be handled with care. To minimize risks, Horizons' IT officer keeps track of the telerobots' whereabouts and ensures that they are handled correctly by users. Trainings and opportunities to "drive" the robots are offered to new users.

Lessons Learned

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- Telerobots can substantially improve communication and collaboration with remote stakeholders compared to traditional communication technologies (e.g. conference calls and Skype). They can also save time and money by reducing the need for travel.
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Conditions for success

- Openness from colleagues to work with a robot. While telepresence robots give a lot of independence to their users compared to traditional video chat technology (e.g. Skype), colleagues have to keep an open mind and make the necessary adjustments to how they interact with the users of telerobots for their use to be effective.
 - IT support. Once per month, the telepresence robots need a tech tune-up to make sure that the charging station is working properly and that the Ipad (head) of the robot has downloaded the latest updates.
 - Excellent internet bandwidth to avoid telepresence robot 'blackout' (Internet is required to stay connected to the robot).• Flat floor for robot wheels. Steps or different types of floor may limit the mobility capacity of the robot.
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Other information

This year, Horizons may test for the first time a public consultation workshop with the telerobots. The telerobots may be used by online participants from across Canada to participate in workshops at Horizons' office in Ottawa. This innovative approach would be tested in the context of Canada's efforts to better connect with citizens, to hear their needs and concerns, and to tap into the knowledge and expertise from all sectors and all regions for improved public policy outcomes.
