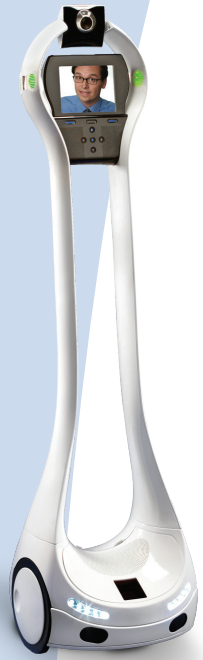


# SUPERCHARGING DISTRIBUTED PROJECT TEAMS

## How VGo robotic telepresence can fully integrate remote engineers by:

- Improving collaboration
- Boosting productivity
- Keeping projects on track
- Improving job satisfaction
- Paying for itself within three months

***"When you can't be there, VGo there!"***

***Abstract***

*When development and project teams are spread across two or more locations, the geographical separation has a substantial negative impact on their productivity. Physical separation acts as a barrier to the informal, organic dialogue that is the lifeblood of effective teams. Neither phone nor email, nor even traditional fixed telepresence systems, can effectively replace person-to-person interactions, and travel is expensive and time-consuming.*

*Now however, VGo overcomes this challenge. With VGo, remote team members can gain all the benefits of being present at the major project location – without the time and cost of traveling. The result is not just reduced travel costs, but also improved productivity, lower project costs, earlier completion, and enhanced employee and team morale. For less than $6,000 VGo can supercharge the project team.*

## The Challenge of Distributed Teams

In today's tech economy, many development and project teams are geographically distributed, with team members in two or more locations, often across the country or around the world. While distributed teams can be very successful, they also face considerable challenges in effective collaboration, and in particular in the organic, ad hoc communications that is the lifeblood of any team.

In a typical project team, much of the dialogue takes place in informal settings: in the hallway, around the water cooler, in front of a whiteboard, in the lab, or around a prototype. These are the settings for critical discussions and debates on topics such as architecture, interpretation of specifications, prioritization of tasks, assignment of responsibilities, ideas for improvement and evaluation of alternatives. The importance of informal collaboration is further magnified by today's lightweight project frameworks such as agile software development. Much of the communications between project manager and team members, including consulting, coaching and reviewing, also takes place in informal settings. While some of this dialogue can take place by phone or by email, much of it cannot.

The physical separation of team members directly impact productivity, since not all efforts are fully in alignment, and not every contribution can be fully leveraged. By traveling from site to site, project managers can improve communications, but travel is expensive, above all in the unproductive down time it entails. And reduced productivity flows directly to the bottom line, often leading to product delays. Additionally, time-to-market has been shown to be one of the most important factors in determining the financial return from any new technology product.

### A Challenge Here to Stay

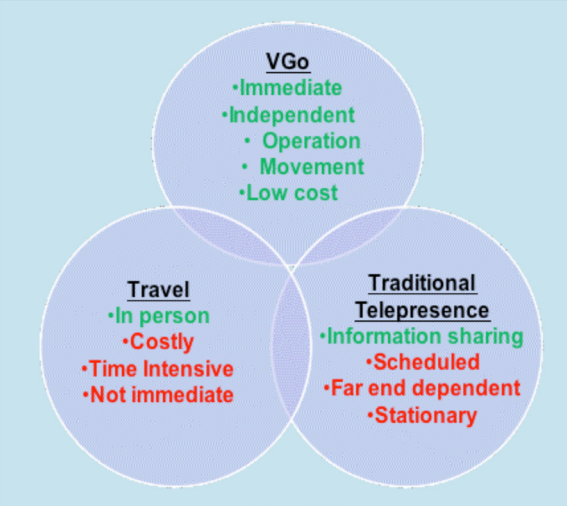
The fundamental reason distributed teams have been so common is that engineers are a scarce, strategic resource to businesses: hard to find and costly to recruit and retain. Many individual engineers have specific skills and talents, and may also possess institutional and architectural knowledge that make them vital. For those businesses that develop technology themselves or that leverage technology heavily within their business, these individuals are a critical component of their intellectual assets.

Of course, most businesses do not deliberately set out to establish distributed teams. But there are many reasons they are intrinsic to the environment and here to stay. For example, the team may need to combine skills that are available in particular innovation centers; local individuals with the right skills may be committed to different projects; the company may have evolved through mergers or other combinations; and key contributors may move for family or other personal reasons.

## OPTIONS FOR EFFECTIVE TEAM COMMUNICATIONS

So geographically distributed teams are a fact of life. The question for engineering managers and project managers is how to leverage them effectively.

These days a project team has a variety of communications mechanisms available, most of which have their place.




- Email and document sharing is a vital part of most projects, but does not provide a platform for critical interactive exchange.
- The phone is more interactive, but phone discussions lack the visual dimension that is critical to many engineering dialogues.
- Fixed videoconferencing, and especially sophisticated and expensive telepresence systems, are great for team meetings. But ad hoc interactive discussions often happen outside the conference room – and even those that start there often move to the break room or water cooler. Also, telepresence systems are very expensive, and few organizations have the benefit of suitable rooms available whenever they want one.

Most importantly, none of these options can address the informal ad hoc dialogue among team members, and between project managers and team members. Also, none provides the in-person visual experience uniquely afforded by robotic telepresence.

### Now, A Solution: VGo Robotic Telepresence

Now, however, a much better alternative is available: VGo robotic telepresence. Using VGo, any team member can be where they are most effective – even if they are not there in person. VGo is a mobile robotic appliance equipped with a video camera, screen and high-quality audio, that can be driven by an engineer from their laptop, transporting them to a project location tens, hundreds or even thousands of miles away.

The engineer can move around the project facility, going anywhere within the reach of the wireless network. In this way, the remote engineer has an experience close to that of being physically present in a remote facility; they can see, hear, speak and above all, move around completely autonomously, just as if they were actually there in person.

Unlike other forms of telepresence or videoconferencing, which are limited to a specific location – usually a conference room or someone's office, VGo enables full remote access to development labs, prototyping shops, brainstorming areas, creative departments, new infrastructure installations, clean rooms, manufacturing floors or anywhere – all during the same visit. Because of this mobility, and because it is fully under the control of the remote engineer, VGo has three critical advantages over alternative methods of remote communication:

- It provides a remote engineer with complete autonomy to "walk" around anywhere in a remote facility, hearing, speaking and seeing as they go.
- It delivers an in-person visual experience so the remote engineer can see what they would see if they were there: prototypes, development models, and the ubiquitous and often spontaneous whiteboard flow charts and architecture diagrams.
- It facilitates the informal dialogue that is so fundamental to the creative process, whether in a fellow engineer's cubicle, in the development lab or around the watercooler.

## VGO CASE STUDY

Reimers Electra Steam is a long-established developer and manufacturer of energy production solutions for applications such as humidification, bakery ovens, garment care, sterilization, laboratories and food service. When a key design engineer, Erwin Deininger, relocated for family reasons, the company badly wanted to retain his experience and expertise. They tried various forms of desktop videoconferencing, but none fully met the need – and often required someone from headquarters to carry a laptop around, and to point its webcam at whatever Erwin needed to look at.

Then the company discovered VGo. It has stationed a VGo in their Clear Brook, Virginia facility that houses the development labs, production lines, and executive offices. Using his laptop, Erwin visits the Reimers headquarters facility on most workdays, meeting with executives and engineers, collaborating on new designs, inspecting products being built, and addressing problems that arise in the lab or on the production line.

A typical workday for Erwin starts with a 10:00 am meeting with CEO Roger Burkhart – conducted via VGo from his remote location. This meeting is often followed by ad hoc meetings and discussions with other members of the Reimers team. With VGo, Erwin is able to "walk" the facility, tracking down the folks he needs to talk to, and socializing with people he meets along the way. To everyone there, the VGo is simply "Erwin."

In addition to meeting and interacting with his colleagues, Erwin regularly uses VGo to inspect some aspect of the products under development. He can position himself to comfortably see entire energy systems (typically 4 to 6 feet high and up to 10 feet long) or he can focus in to inspect a particular feature or detail. A VGo feature Erwin often finds helpful is the ability to take a high-resolution photo that he can then examine in detail on his PC and keep for later reference.

From time-to-time Erwin also goes to look at systems on the factory floor, for example to ensure that the custom features ordered by a customer are being correctly implemented. While he has to pay attention to forklifts and skids, Erwin can easily maneuver around the factory, talk with operators and examine the products they are building.

Like many VGo's in use today, Reimers' VGo is very highly utilized, often for hours at a time. Thankfully, the battery provides sufficient charge for a full day of operation.

According to Erwin, visiting the headquarters facility via VGo is almost as good as being there in person. "I find I am able to interact freely with my fellow team members," he says. "It is really helpful to be able to see them in person, and to see the product they are working on. Critical to the experience is being in full control of where I go and what I look at. VGo robotic telepresence has completely transformed the experience of working from a remote location."

According to Reimers VP Tony Delligatti, "It is kind of funny how you get used to things. Early on, when Erwin/VGo rolled through the office, it was an event. We would stop and chat a while. Now, he gets the obligatory 'good morning, Erwin' and we go on our way. It's kind of like he is really here in person." Reimers president Roger Burkhardt adds that their VGo paid for itself in about three months, with the most important factors being the productivity improvements from fully integrating Erwin into their operation, and from reduced needs for Erwin to travel to the home office. As Roger says, "Bottom line: It works!"

### Projects of Many Kinds

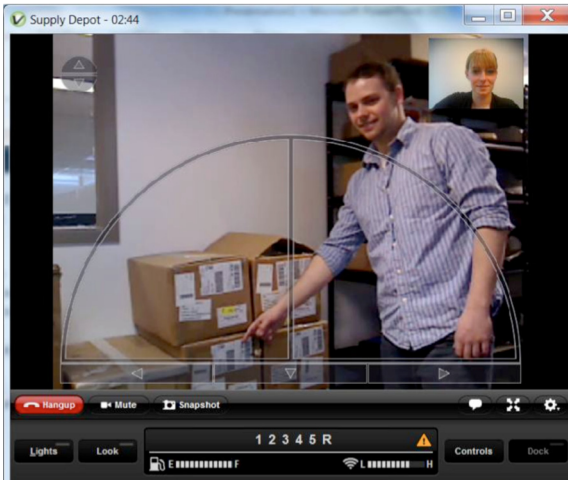
Companies are using VGo robotic telepresence to integrate engineers into a wide range of different types of development projects. The example of Reimers Electra Steam (see sidebar) illustrates a number of the ways technology companies are using this new capability to boost the productivity of distributed teams. Other examples include:

- Technical writers at a well-known networking equipment vendor are using VGo to keep up with development engineers. With VGo they can participate in a bull pen discussion using a whiteboard. VGo greatly increases the efficiency and work quality of the technical writers by integrating them more completely into the team.
- A major industrial engineering firm is using VGo to bring new recruits hired at one of their remote locations to the central location, where touring projects under way and the production line is an important part of their induction process. The result is that new employees ramp up quickly without incurring substantial travel costs.
- An engineering concern with three major project locations has sited a VGo in each of its facilities so that project managers can use VGo to travel to that facility to meet with team members and inspect their progress first-hand. When not used by project managers, the VGos are also used by other team members to strengthen their collaboration. The result is better managed projects with a substantial increase in productivity, while also reducing time and costs devoted to traveling.
- A software development team uses a VGo to enable a senior architect stationed in a remote location to participate fully in its agile software development process. The architect uses VGo to participate in daily stand-ups, to join breakout teams and bug reviews, and to check the status of tasks on the project whiteboard. VGo increases his productivity by fully integrating him in the process, and allows the entire team to benefit from his contributions.

## VGO IN DETAIL

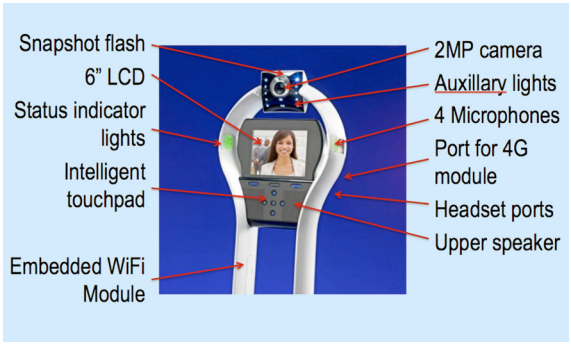
VGo has three main elements: the VGo PC App (or Mac App) installed on the remote user's PC, the VGo Robotic Telepresence Appliance, and VGoNet, the cloud-based network that enables VGos and VGo Apps to communicate.

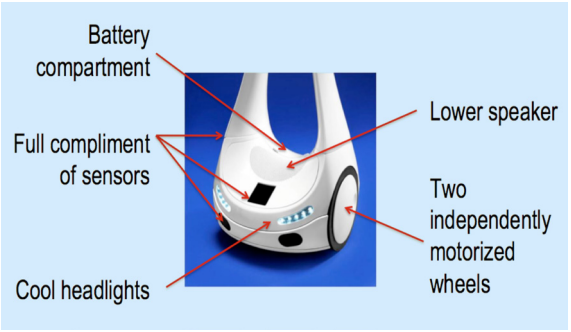
To utilize VGo, a remote engineer or manager installs the VGo PC App on their laptop. A list of VGo's to which they have access is always up to date. From this app, they can connect to a VGo (or one of several VGo's if they have the right access privileges). The PC App provides high quality two-way audio and video. And when the user positions their mouse pointer on the screen – driving controls appear. The user simply clicks where they want to go, and the VGo moves in that direction – move the mouse pointer further and the VGo accelerates. The camera can look anywhere – up, down, all around. The user can move delicately around tight spaces, slowly pan around the room or join a colleague walking down the hall. They can look over a colleague's shoulder at a workstation screen, see the whiteboard, or examine prototypes. Users say that the single, most empowering part of using VGo is that they are autonomous in the remote location. The user can drive where he or she wants, look at what they want and communicate with whoever they want – just as if they are there in person.



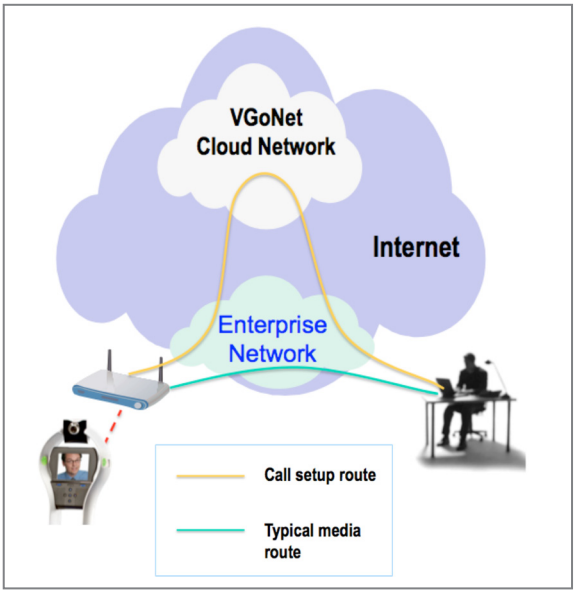

*This VGo screen shows the simple, intuitive driving controls combined with state-of-the art audio-visual communications.*

VGo itself is a light-weight, motorized, remote-controlled platform uniquely integrated with a camera, microphones, and video display. The appliance is optimized at 4 feet tall so it works equally well when interacting with people who are sitting or standing. Battery power enables it to run for up to a full day between charges. When it's time to recharge – just click the "Dock" button and VGo automatically positions itself on its charging dock (included). The appliance also includes sensors so it can't be driven down stairs, and will recognize and warn the user of large objects such as walls and furniture, and also when it is reaching the edge of the WiFi network.




VGo is continually connected to VGoNet, a cloud network that keeps track of resource availability and initiates connectivity upon request by a remote user. VGoNet maintains a directory of VGo's and users and provides for call control. VGoNet Manager is a web-based management utility that allows the designated administrator to control user and access privileges.



## RETURN ON INVESTMENT

VGo is affordable: users can be driving around remote locations for less than $6,000. Given the strategic value of the individuals using VGo in a typical development project, the return is often self-evident. Businesses using VGo for this application typically report that VGo pays for itself in three months or less.

When users analyze the ROI to their own projects, there are typically four main factors they consider:

- reduced direct travel costs
- avoidance of travel-related downtime
- increased productivity of the connected individual
- increased productivity of the rest of the team.

For example, the following analysis reflects a 12-month project with a total budget of $1 million, in which one remote senior engineer is separated from his US home office by a domestic medium-haul flight. With these parameters, and leveraging cost estimates from industry sources, the savings from using a VGo would be.

| | 12 month savings | Notes |
|---|---|---|
| Travel expenses | $6,000 | 1 monthly trip at $500 each |
| Travel related downtime | $2,500 | 4 hrs downtime on each trip |
| Improved productivity of remote engineer | $10,000 | 10% of loaded cost of remote engineer (see note below) |
| Improved productivity of rest of team | $10,000 | 10% of loaded cost of one central site engineer (see note below) |
| **Subtotal project savings** | **$28,500** | |

*Note: Studies of telepresence implementations in development teams show improvements in productivity of 10-20% depending on the effectiveness of the implementation (for example:* Enterprise Video Collaboration: The ROI of Video in Sales, Product Development and Project Management, *Aberdeen Group, 2009). The model here is more conservative, reflecting a saving at the low end of the surveyed range, and without accounting for the incremental benefits of robotic telepresence. The productivity impact on the central site depends on the web of functional interconnections to the remote individual; here again we are conservative, reflecting only a single central site individual heavily impacted by the interaction.*

In short, in a typical development project, VGo pays for itself in savings to the project budget in less than three months. In addition, there are other financial benefits over and above these direct impacts on the project budget. For example, improved development productivity doesn't only reduce project costs, it also gets the product to market sooner. The financial benefits to the business of earlier availability typically exceed the savings in engineer time. Another example is that the increased interaction among team members, combined with reduced aggravation from travel, contribute to employee satisfaction and morale, and aid in employee retention. Better employee retention translates into a financial benefit for the organization as a whole, through reduced recruiting costs.

### Next Steps — Seeing is Believing

For a limited time, VGo is offering qualified purchasers a try and buy option. Order a unit and try it in your environment for 30 days with no obligation. We are confident you will be amazed how VGo boosts your organization's productivity. If for any reason it does not, simply return it with no obligation.

If you are not yet sure if VGo is right for you, we suggest you join us for one of our regularly scheduled webinars where we can tell you more about how VGo works and answer your questions. Or call us to schedule a demo.