Due to the COVID-19 pandemic, day and employment service providers have had to quickly determine how best to provide supports for people they serve. For many this means transitioning to services and supports that can be provided remotely. This brief is one in a series developed to help community providers continue to provide services to those who are currently working, seeking employment, or engaged in community-based day supports.

During this time, we are all learning how to best support the people we serve. We welcome your feedback and ideas as we all work together to provide services that help people to continue to work towards their goals while staying safe and healthy.

ICI COVID-19 resources: covid19.communityinclusion.org

Assistive technology devices are nothing new. They were first defined in the Technology Related Assistance to Individuals with Disabilities Act of 1988 as “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.” Assistive technology consists of a broad range of both low tech and high-tech devices, ranging from binder clips and Velcro, to highly customized computer workstations.

While assistive technology is not new, what has changed is high-tech devices for a broad range of purposes are now easily available and used almost universally. As a result, there is huge potential to make fundamental changes in the way services and supports are provided to individuals with disabilities. This publication discusses how readily available pieces of technology (smartphones, tablets, smart watches and similar devices) and their various features and capabilities, can and are being used as assistive technology to support individuals in employment and other community activities in ways that maximize success and independence, and reduce reliance on job coaches and other external paid supports.

Along with general guidelines on use and funding of technology, technology is examined from two specific perspectives:

- Providing job coaching in a way that does not require the physical presence of the job coach at the employment site.
- Using readily available technology to increase self-management of tasks and job performance.

While this publication focuses primarily on employment, these strategies can also be used to support individuals in community activities such as volunteering and recreation, and at home.
Considerations in Using Technology

In considering the use of technology for onsite employment supports for either remote job coaching, or self-management of tasks, begin by analyzing the needs of the individual and work environment, and identify factors that might impact whether and how technology is used.

- What is the issue and is technology a potential solution?
- How will the technology fit within the work environment? Will the technology allow normal employer workplace routines to continue, or will it be disruptive?
- Can the technology be used with existing devices in the workplace (e.g., on an individual’s work computer), or will it require a separate device?
- Will the individual need internet access to use the technology? If so, is that available?
- Will the technology help the individual to be fully included in the workplace or will it result in the person being excluded and stigmatized? What can be done to ensure the technology is a means for full inclusion?
- Is the employer supportive of the use of technology in the workplace, or do they have concerns? Some concerns may simply be about potential disruption to the workplace. In other cases, the workplace may have rules about use of technology. For example, a healthcare or government facility may not allow use of smartphones and or videotaping by employees for security reasons. Or they simply may not allow employees to be on their personal phones during work time.

**Presenting and negotiating technology use with the employer**

Technology drives much of the innovation in today’s work environment. Presenting technology to employers as a way to assist an employee with a disability to maximize their performance demonstrates to the business that you are a service provider driven by innovation, enhancing the appeal of your services and supports to the business community.

In negotiating with employers on use of technology, the following are factors to consider:

1. Explain how the technology will be used and make the case for why it will assist the worker in being a productive and successful employee, will be an asset to both the individual and employer, and possibly make the overall workplace more effective, efficient, and streamlined.
2. Negotiate around when and how the technology will be used. For example, if video is being used for remote job coaching, this could be for limited amounts of time, at the beginning and end of the day, or only in certain locations.
3. If there are business rules and regulations that the use of technology would violate, determine the flexibility of those rules and whether there are work-arounds. For example, the employer may not allow personal cellphones, but a cellphone specifically for work purposes may be okay; a video player that does not record can be used instead of a smartphone or tablet. In some cases it may be an employer’s own rule they have some leeway with. In others, it may be a government regulation that must be followed.
4. Consider whether a case can be made that the use of technology is a reasonable accommodation under the Americans with Disabilities Act. This not only allows the presence of the technology, but the employer is then required to pay for it.

**Engaging individuals in the process**

In line with the tenets of self-determination and informed choice, individuals should be full participants throughout the process of determining, developing, and implementing the use of technology, with their interests and preferences driving the process. Fully engaging individuals makes it much more likely they are going to be receptive and successful in using the technology. For technology that will be used for self-management of performance, allow individuals as much input and discretion as possible in selecting the apps, sounds, voice, music, and pictures that will be used. Many individuals personalize their technology devices with stickers and different types of cases; consider this within the parameters of job professionalism.

**Train individuals and employers on use of technology**

In training individuals, make sure they understand how to properly use the technology for its intended purpose, and the parameters around its use within the workplace or community. If possible, perform trial runs before introducing the technology into the setting where it will be used. As part of training, address the relevant issues listed in the Technology Checklist on page 3 (controls, accessibility features, security, storage, etc.).
As technology is introduced, support the individual to explain technology to their supervisors, and co-workers (or the director and fellow participants in a community activity). This includes how the technology will be used, and any support that will be needed to use it effectively.

Know the limits of your knowledge and engage experts

Some simpler technology can be fairly easily implemented. However, technology can be complex, with many issues and ideas that you may not even consider in selecting and using it. Recognize the limits of your knowledge and engage experts to: assist with identifying technology options, provide guidance on technical issues, help with training, and troubleshoot issues that arise. A bit of investment in technical expertise can potentially provide long-term benefits in the successful use of technology. Your state’s assistive technology project can be a major asset in working on technology issues, and is a suggested starting point in getting assistance and expertise.

Where we go from here

The use of technology for supports for those with significant disabilities is still relatively in its early stages, particularly for those with intellectual and developmental disabilities. However, it has the potential to be truly revolutionary in how individuals with disabilities succeed in the workplace and community, and how services to assist them are provided. The advent of the “Technology Forward” effort in Massachusetts, and similar “Technology First” efforts in Missouri and Ohio, are sending a clear message of technology as a primary consideration in designing services and supports. There is no doubt that over the next several years the use of technology for remote supports, self-management of tasks, and enhanced performance will continue to evolve and expand. To take full advantage of these opportunities:

- Use of technology must be one of the core competencies of staff and service providers
- A technology plan should be integrated within career planning, job development, initial job coaching, and follow-along supports, as well as supports for non-work activities in the community
- Funding agencies must be supportive in terms of policies and funding

Keep researching, keep experimenting, keep learning, and keep innovating.

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<table>
<thead>
<tr>
<th>Technology Checklist</th>
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<tr>
<td>Are the controls on the device (on/off, volume, etc.) easily identifiable, or do they need to be marked?</td>
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<td>What are the accessibility features of the device that the individual should be aware of and use?</td>
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<td>Are there modifications needed to enhance the accessibility of the device?</td>
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<tr>
<td>Does the individual need a stand or wall mount for the device so they can easily look at it while working, or for video observation of them while performing tasks?</td>
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<tr>
<td>If the device will not be stationary, does the individual need a device or method to physically carry the device with them? Examples include: a) a waist mount tablet holder; b) a strap/shelf set-up so they can wear the tablet and look down at it as they are performing tasks; c) adding straps to the back of a tablet as a hand hold; d) a lanyard.</td>
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<tr>
<td>Does the individual need a Bluetooth device, speakers, ear buds, or headphones?</td>
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<td>If the individual works in an area that gets dirty, how will the device be protected?</td>
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<td>Does the individual need a carrying case for the device?</td>
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<td>How will the device be secured from both unauthorized use, and theft?</td>
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<td>What are the parameters around use of the device and technology outside of work?</td>
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<tr>
<td>What are the procedures for ensuring the device has power, and what is the charging schedule?</td>
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<tr>
<td>Are there confidentiality and privacy issues that need to be addressed?</td>
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<tr>
<td>What is the back-up plan if the device is lost, stolen, or stops working? Can the information in the device be easily replaced if needed?</td>
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Using Technology to Job Coach Remotely

With today’s technology, a job coach does not necessarily always need to be physically at the job site. Job coaching can be done verbally over the phone, by video call, using texting, via email, or through a combination of all of these. There are numerous benefits in providing supports in this way:

- The reduced presence of staff on the job site allows the individual to fit more naturally in the workplace, and can be a catalyst for increased natural supports.
- Providing employment supports remotely can be a more effective and efficient use of resources, eliminating travel to job sites. It also eliminates the need for job coaches to remain on job sites for a full shift, when the individual may need assistance only for short periods of time, or just an occasional check-in. Through remote supports, a job coach can also more easily work with different individuals throughout the day.
- Remote job coaching allows for staff supports when they might not otherwise be available. This can be particularly helpful in rural areas where there may be a limited number of local service providers, and onsite job coaching requires extensive travel.
- During the COVID-19 pandemic, the use of remote job coaching supports allows staff to avoid unnecessary exposure to the coronavirus for themselves and others, and also allows job coaching to continue if an employer is limiting onsite presence.

The core of remote job coaching is the ubiquitous nature of cellphones in today’s society. The wide availability of cellphones allows for individuals and job coaches to connect without necessarily meeting in person, instead having verbal conversations as needed during the workday. Many phones, as well as tablets, and other devices also have the capacity for video calls (FaceTime, Skype), which can be effective and engaging. The use of video also allows the individual to show the job coach their workspace, what they are doing, and as necessary and appropriate, for the job coach to observe the individual performing job tasks. Video also allows the job coach to provide visual demonstrations to the individual.

While video calls with video and voice are a good option for remote job coaching, using advanced video platforms that have additional features (such as Zoom) can expand on the possibilities for providing individualized remote support. These include the ability to review written instructions, task lists and work-related documents, to view relevant videos and pictures, as well as to simultaneously look at information online (e.g., reviewing a company email or a transportation schedule).

Texting can also be a useful tool for job coaching as a way of checking in and providing reminders, and also for engaging in short dialogue on job related issues. Email may also be a good method for some individuals in terms of giving/receiving reminders, discussing issues and concerns, providing feedback, and sharing information.

In providing remote job coaching, consider the following:

- Follow the tenets of self-determination, with the individual’s preference and needs driving the process. The worker should be a full participant in any discussions and decisions about remote job coaching.
- Remote job coaching is not an all-or-nothing concept. Remote job coaching can supplement in-person job coaching for an individual and vice versa. This can evolve over time.
- Consider a mix of remote job coaching methods (phone, video, text, etc.) and what works best for the particular situation.
- As with any job coaching, interventions are as much with supervisors and co-workers as they are with the individual worker. Be sure to integrate the employer into remote job coaching efforts, and stress how remote job coaching will ensure responsiveness to business needs. Review with the employer ideas and plans for providing job coaching remotely. Be sure they are comfortable with the concept and their role within it, and that it will be done in a way that is not disruptive to the workplace.
- If an employer will not allow remote job coaching, consider conducting remote sessions with the individual when they are off-site at the beginning or end of the work day.
- The same rules apply for remote job coaching as they do for in-person coaching. The emphasis should be on natural supports and social inclusion in the workplace, with the job coach intervening only as necessary, and with a focus on fading external supports as much as possible.

Remote job coaching can be a real asset, and is important to experiment with it and stretch boundaries.
of what we previously thought was possible. Examine each situation specifically in terms of the needs of the individual and employer, and determine whether remote job coaching makes sense as either the primary means of support or in combination with on-site supports.

Development and implementation of remote job coaching

Integrate remote job coaching within the standard options for consideration in individual support plans. Remote job coaching can be part of initial supports or something that is implemented as the individual settles into their job. The following is a step-by-step guide for remote job coaching implementation.

1. Consider what types of job supports the individual needs.
2. Analyze: a) the skills, abilities and preferences of the individual; b) the employment environment; c) the technology options. Also consider the funding agency policies regarding providing services remotely.
3. Based on this analysis, determine if supports can be provided remotely at some level, and if so, how.
4. Discuss options with the individual and employer, and their support for remote job coaching.
5. If remote job coaching is feasible to pursue, develop a plan that specifies the parameters (when, how, etc.), the specific methods to be used, and plan for implementation.
6. Identify technology needs.
   - What technology platform and devices will be used by staff and the individual?
   - What technology does the individual have available in the workplace? Will technology and other equipment need to be purchased?
   - Is internet required? If so, is there internet available in the workplace?
7. Work with the employer on necessary arrangements and supports for remote job coaching.
8. Train the individual on how remote job coaching will be provided, including use of technology.
9. Conduct pilot testing which may include having a staff person at the workplace to help guide the individual and evaluate, with the job coach located offsite.
10. Create a schedule of times the job coach will be checking in with the individual remotely, such as prior to work, during breaks, after work, or while performing certain tasks.
11. As appropriate and within specific parameters, offer the individual the option of contacting the job coach as needed by voice, video, or text for assistance, to troubleshoot issues, or just check in.
12. Begin implementation of remote job coaching.
13. Evaluate the success of the methods being used on an ongoing basis, and make modifications as necessary.
14. As needed during development and implementation, engage others, including funding agencies, case managers, families, guardians, and residential staff.

Paying for Technology

- If the technology is a reasonable accommodation in the workplace under the ADA, the employer is responsible for costs. Even if that's not the case, the employer may still be willing to pay for technology as part of the individual's work supplies and equipment. Bear in mind, the employer then owns the technology, and the individual may not be able to take it with them when they change jobs.
- Identify sources for hardware (computers, tablets, smartphones, etc.) at low or no cost. Use your local networks (both internal to your agency and external) to identify options in terms of funding or sources of equipment. Tech Goes Home and TechSoup have a variety of resources on getting low-cost technology. If equipment is refurbished, be sure it is sufficiently updated and good quality.
- Social Security Work Incentives (PASS, IRWE, etc.) can be used to offset the cost of technology (hardware, software, internet, data plans) for individuals who are either working or have a work goal.
- Medicaid Home and Community-Based Services, public vocational rehabilitation, and other funding streams may pay for technology and technology plans.
- Consider targeted fundraising, and private foundation funding.
- Savings in terms of staff time and resources may help offset the cost of technology.
Policies and procedures on remote job coaching

It is important to have clear policies and procedures on remote job coaching, addressing such areas as:

- Technology platform(s) to be used. (Ideally the same platform and devices will be used across the agency, for consistency in service delivery, easier technical support, and ensuring privacy and security controls are in place).
- Security and confidentiality in remote job coaching
- Parameters of remote job coaching – when and how it can/should be used, not used
- Following funding agency policies for remote services
- Working with individuals, employers, and businesses for arranging remote job coaching
- Requirements for notification of case managers, guardians, families, etc.

Training on remote job coaching

Train both staff and individuals on remote job coaching. The following are among topics to be covered:

**Staff**
1. Remote job coaching policies
2. Methods and options for remote job coaching
3. How to use technology
4. Arranging remote job coaching with the business
5. Arranging with and training individuals on remote job coaching
6. Notifying families, guardians, or funders
7. Privacy and confidentiality issues

**Individuals**
1. Options for remote job coaching and the potential benefits
2. Individual preferences: comfort with remote job coaching, and preferences on specific methods
3. How to use technology
4. Specifics of how remote job coaching will occur (methods, times, etc.)
5. Explaining remote job coaching to supervisors and co-workers
6. Abiding by employer rules in remote job coaching

Identifying Appropriate Technology

There is a tendency to immediately jump to a piece of technology as a solution, without going through a methodical step-by-step process for determining options and what piece of technology works best for a specific need. Core areas are: task (what are you trying to accomplish), skill (skill of the individual), and environment (where technology will be used). The following are the basic steps to be done in partnership with the individual:

1. Identify the issue to be addressed (e.g., the ability to perform a task, the provision of job coaching), for which technology may be an option. What data/information do we have about the issue? What is the desired outcome?
2. Determine if assistive technology has the potential to address the issue and reach the desired outcome.
3. Review the individual's strengths, skills, needs, and learning preferences, and how these factors impact technology options.
4. Examine the environment the technology will be used in, and determine what environmental factors need to be considered.
5. Using the information developed, identify potential technology tools, as well as companion strategies and supports, to address the identified issue.
6. When considering technology options, do not immediately gravitate to a higher tech option. Consider if a low-tech option would also work and be more feasible.
7. Conduct trial use of the identified technology. Develop criteria for determining success. Collect and analyze data on the impact of the technology in the environment in which it is to be used. Based on this trial, determine if the technology is appropriate and feasible to address the issue identified.
8. Once an appropriate tool and strategy have been identified, develop and implement a written plan for use of the technology, including training the individual on its use (including any accessibility features), and arrangement of any necessary supports.
9. Evaluate the effectiveness of the technology on an ongoing basis, considering other options as needs and tasks change, or if the technology is no longer effective.

Particularly in situations which are more complicated (e.g., the technology solution is not readily apparent, a high level of investment in technology is required, the tasks being addressed are complex), consider the services of a professional in conducting assistive technology assessments, such as an occupational therapist or rehabilitation engineer.
Most workplaces use technology for organizing and managing tasks and enhancing performance. Use of technology to support people with disabilities in their job starts with ensuring the workplace’s technology tools are fully available and accessible to the employee with a disability. In addition, there are ways video, apps, and other technology can specifically be used by people with disabilities to maximize employment independence and success.

Using Video for Performance Self-Management

Video Modeling

- **Basic Video Modeling:** The employee reviews video examples before engaging in tasks. Videos can be viewed by the employee on their own or with a job coach, either in-person or through remote technology (e.g., Zoom).

- **Simultaneous Video Modeling:** A video of the task being performed is played one time from beginning to end, and the individual follows along to complete the tasks.

- **Continuous Video Modeling:** Similar to Simultaneous Video Modeling, in Continuous Video Modeling, the video is played on a loop. The continuous presentation of the video allows individuals to work hands-free, look at the video as needed, and refer back to specific steps while completing the task.

- **Video Prompting or Cueing:** While performing a task, the individual watches short video segments of each step needed to complete the task, and after performing each step, they move on to the next video clip in the sequence.

For video modeling to be successful it needs to be done properly. **Autism Focused Intervention Resources and Models** and **Autism Internet Modules (AIM)** have online courses on video modeling. **AIM also has a step-by-step guide.** Using Video Modeling to Teach Vocational Tasks, by Ryan Kellems, contains a checklist of these steps (pp. 99-101). While much of this information specifies the use of video modeling for people with autism, it can be used with a wide variety of individuals.

Other Uses of Video

- **Error Correction Video Feedback:** When an individual makes an error, they review a video of the task being performed correctly, to assist in correct performance of the tasks.

**Video Feedback:** The individual is videotaped as they engage in tasks, and then evaluates their performance when they watch the video. This evaluation can be done on their own (self-evaluation), or with support staff (possibly working remotely).

**Video Stories:** Filming an individual telling a story about their routines at work or in the community, which they regularly view, can be a helpful support. (See page 33 of The Apple iPad™ as an Innovative Employment Support for Young Adults with Autism Spectrum Disorder and Other Developmental Disabilities for an example.)

Videos need to be well-planned, scripted, and well-produced in order to be effective. The video used should either have the individual themselves performing the tasks, or someone who looks similar, to ensure the individual can relate to how the tasks are being done. The video will ideally be customized to the specific individual and setting, as individuals may have difficulty following generalized instructional videos. Also, the effectiveness of different video methods will vary, depending on the individual and the nature of the work environment and task.

While fading of video supports is sometimes recommended, there may be cases where video is part of ongoing support. For example, if an employee is using short video clips for instruction, this may be a helpful tool to maintain their performance.

With innovation and creativity, today’s technology puts forth the possibility of transforming the lives of people with disabilities to work and live in ways not previously thought possible, while at the same, enhancing society’s positive perception of people with disabilities, as fellow workers and community members.
**Additional Technology Options for Self-Management of Tasks and Job Performance**

**Picture schedulers and guides**

Like video, pictures (possibly with voice prompts) can be used to guide individuals in performing tasks. A simple picture sequence can be developed, and an app such as Skitch by Evernote can be used, to add words, shapes, and annotations. Pictello and FirstThen apps can be used to create more sophisticated picture schedules and guides that could be useful to individuals at work.

**Voice prompting**

While video and pictures can be helpful in guiding individuals on successful performance of tasks, voice cueing and prompting recorded on a device (smartphone, tablet, etc.) without visuals can also be used.

**Other cues and prompts**

There are a wide variety of additional ways that technology can be used to cue and prompt individuals. Examples include checklists, timers, alarmed calendars, and alert reminders, via technology already embedded in devices or through additional apps.

**Communication**

Technology can be a huge asset in employment and community settings for individuals who experience communication challenges. Text-to-voice and voice-to-text apps and devices, as well as various word prediction apps for both voice and text, can be of great assistance. Having audio of standard phrases used in the work or community that an individual with communication challenges can easily access on their device, can also be helpful in communicating with supervisors, co-workers, customers, and others.

**Behavior**

Technology can be helpful for individuals with behavior challenges. In addition to being able to quickly outreach to the job coach when feeling anxious or needing help, technology can assist with behavior in other ways. Examples include having a video or instructions on the device regarding what to do in a stressful situation, or using a calming app. Listening to relaxing music, watching a short clip of something the individual finds funny or relaxing, or playing a short game can also be helpful, as long as it’s within what’s allowed at the workplace. Like many people, these can even be used as a self-reward for completing tasks or at the end of a shift.

**Integrated apps**

There are individual apps that can be used to address scheduling, management of tasks, communication, and other areas. However, there are now apps that integrate a number of these functions into one app, specifically designed for people with disabilities. Examples of such apps include: Work Autonomy, MeMinder, CanWork, TaskAnalysisLIFE.

**Use of QR codes and barcodes**

QR codes or barcodes that can be scanned with a smartphone or another device, offer a variety of possibilities to provide support on the job. QR and bar codes can be posted within the workplace (with the employer’s permission). An individual can also have a notebook of QR or bar codes with descriptions and/or pictures to help them understand the purpose of the various codes. Here are just a few examples of ways these codes can be used:

- Individuals can scan codes for written, verbal, picture, or video prompts.
- QR codes can be used to easily access information, such as scanning to find a stored instruction document, a useful website, a sound file, and many other resources and information.
- QR and bar codes can be helpful with tasks that require making a list (for example creating a supply list by scanning each item that needs a refill).

There are many resources online that can assist in creating QR codes and barcodes.

This publication has numerous ideas and examples on use of readily available technology to support individuals with disabilities in employment and the community. The resources and references on the following page contain a large number of additional examples and strategies for use of technology in employment and other settings.

The Institute for Community Inclusion publication, *Easy to Access Assistive Technology and Apps for Individual Success*, has additional information on identifying and using apps for support in employment, the community, job seeking, and self-care.

“For most people, technology makes things easier. For people with disabilities, technology makes things possible.”

- Mary Pat Radabaugh, Director of IBM’s National Support Center for Persons With Disabilities
RESOURCES

- Employment First Massachusetts Webinars
  1. Robots are Taking Over! Technology Assists Human Supports to Fade, Opening the Door to Independence
  2. Awesome Apps and Adaptations –Achieving Vocational Success for Individuals with Intellectual Disabilities
- APSE Webinar
  Strategies for Remoting Employment Supports

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