Introduction to Change Management

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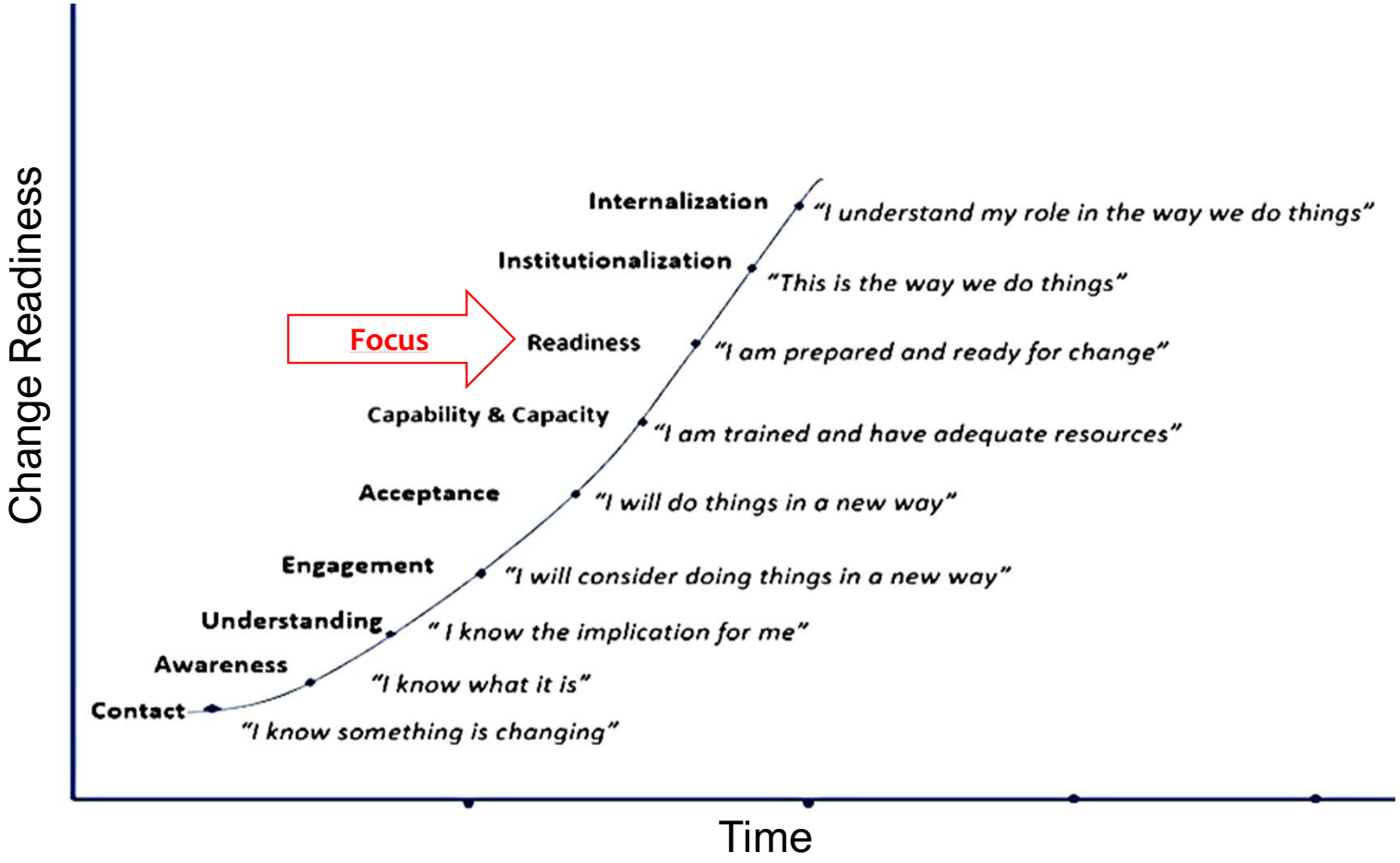
Change Management is a framework which recognizes the costs of early adoption as an investment in the future, allowing everyone to place a greater priority on change readiness.

Change management enhances readiness for more change.

A goal of change management is to foster "**Change Readiness**", which helps workers move more quickly from "First Contact" to "Understanding My Role".



Change was seen differently in the past.

In the 1950's, there was a widespread belief that science could solve any problems, and combined with the wonders of the Atomic Age, a popular promise was created that in the future there will be unlimited energy, which would transform our lives and bring us things like:

- Traveling to work in Flying Cars.
- Using Jet Packs or Rocket Boots.
- Development of Atomic Tools.

Change management embraces change in more realistic way.

Looking around in the 2020's, we can see that the Atomic Age did not bring us unlimited energy, but instead, technology has brought us unlimited information. Examples include:

- Hand drawings have become CADD drawings.
- Spell checkers have become Grammar checkers.
- Blue tooth connectivity and 5G.
- GPS timing.

In the future, the idea of information itself will change with Artificial Intelligence becoming an everyday part of our lives.

Practical example of information technology helps in coating work

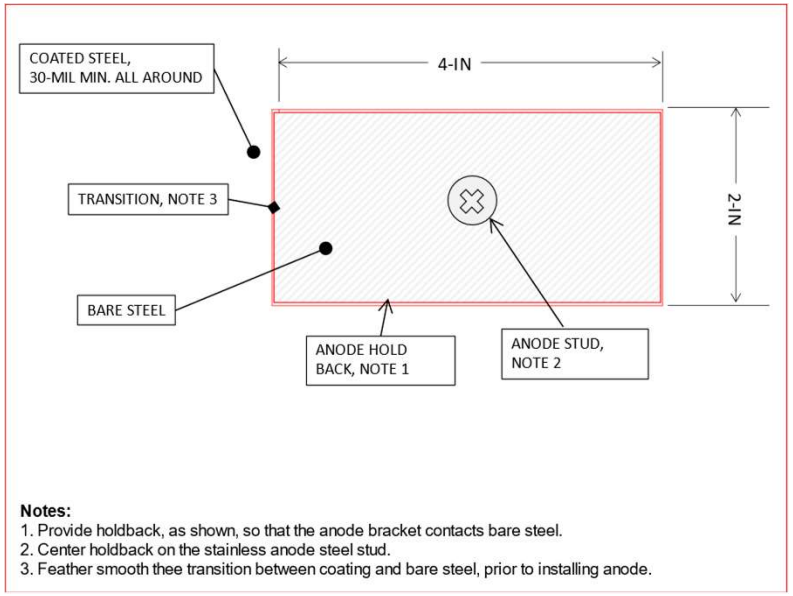
During a recent project, I specified anode bracket holdbacks to provide a bare steel contact where anode brackets are attached.

During the first part of the project, I noticed only the stud was masked, and later workers would chip out the coating to create a bare steel contact patch.

This led to misalignment between the anode bracket and the hold back.

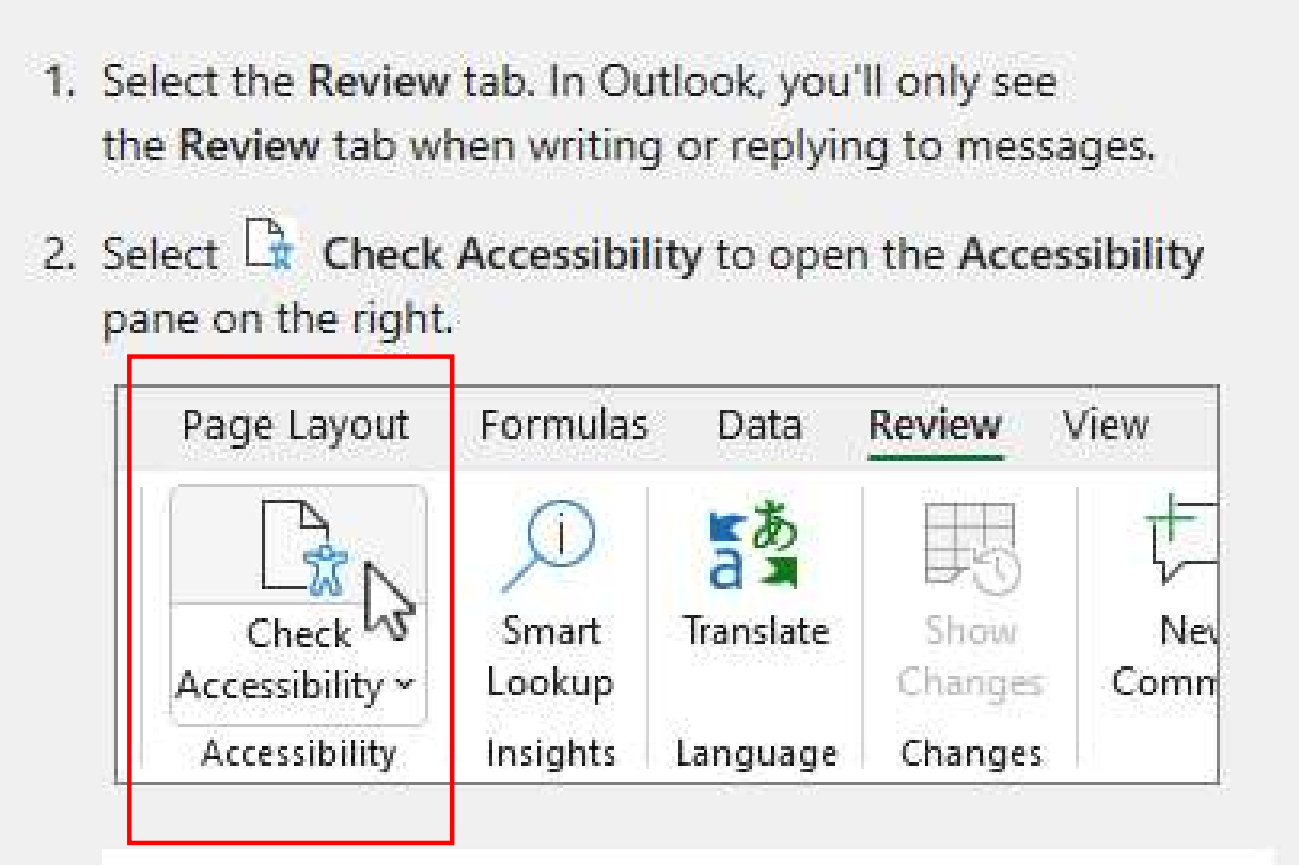
Information technology allows for effective communication.

Using the information technology now available on my desktop computer, I was able to efficiently create a revised construction detail, directing the Contractor to mask the stud and contact patch. This created a holdback which ensured an accurate alignment between the anode bracket and bare steel.



More futuristic information technology will enhance communication, such as the new Accessibility Checker used in the Microsoft Suite.

Here is an example of how information technology goes beyond everyday tasks such as just making drawings, and in the future will electronically review your writing with an Accessibility Checker.



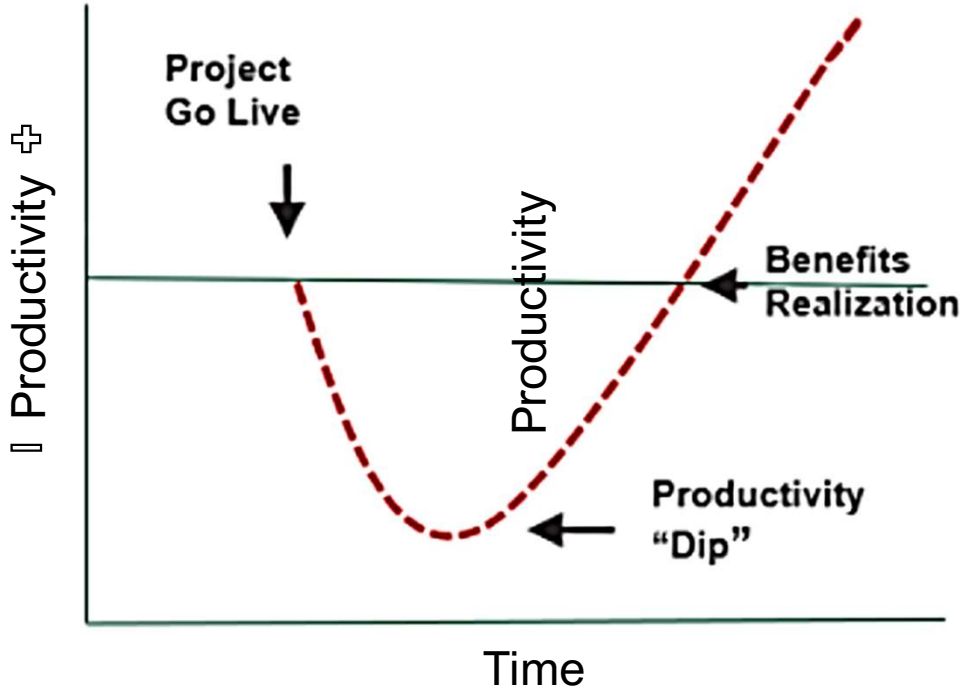
Characteristics of change management

- Change management recognizes change as an **investment.**
- Change management recognizes success, fostering a deeper appreciation for **proactive** change management.
- Structured change management incorporates strategic planning, so change management can include **participation from all levels.**

Change curve

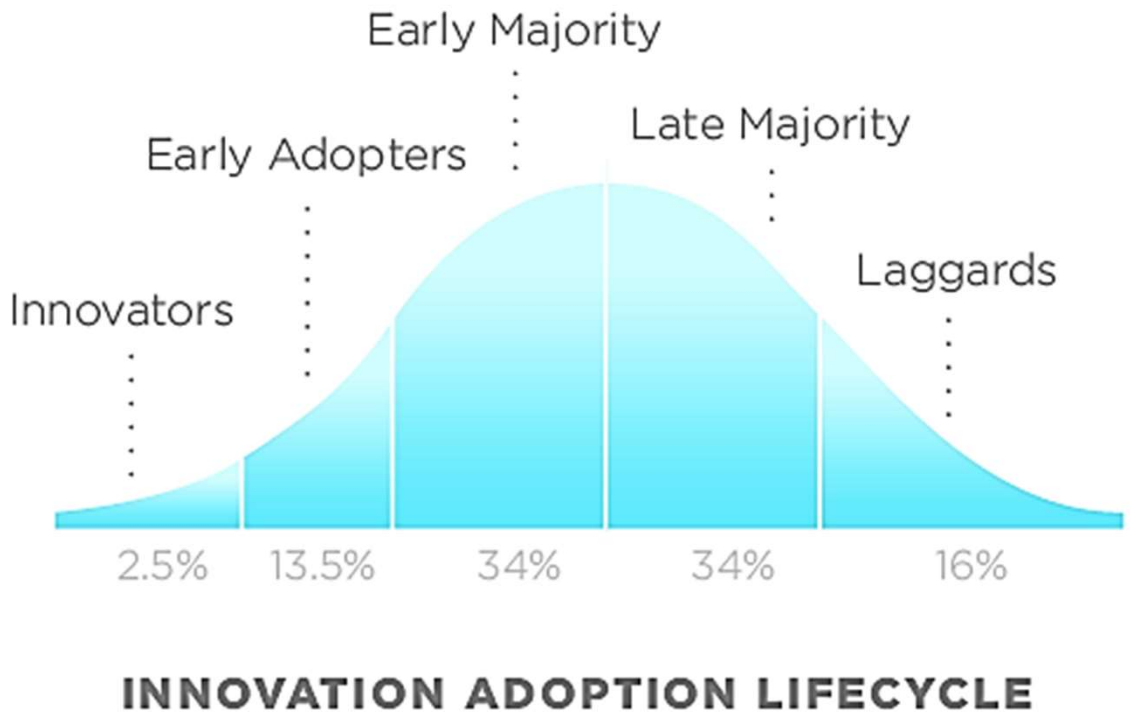
Change management introduces the idea of a change curve, which depicts the costs associated with workers learning to use new tools and identifies how change results in a productivity dip.

Change curve



How does change management help embrace change?

Change management embraces the **innovation adoption lifecycle**.



INNOVATION ADOPTION LIFECYCLE

From Wikipedia article on Early Adopter

Risks of being an early adopter

Early Adopters adapt technology first:

- Typically, early adopters are customers who provide considerable and candid feedback to help refine future product releases.
- Early adoption could also be referred to as a form of testing in the early stages of a project.

A major hurdle was the frustrations in using early data logger systems.

Experience with earlier versions of the fully integrated data logger systems we use today highlighted the costs of early adoption.

- Problems included the data loss.
- To avoid data loss, duplicate hand-written data was tabulated to avoid losing work and having to redo surveys.
- Problems persisted and occurred for unknown technical reasons.
- Repeated frustration accompanying these problems resulted in an unwillingness to bear the risk of further upgrading to more modern data systems at all levels.

The costs of lagging are caused by reacting to change instead of being proactive and ready for more change.

Those who lag, adapt technology last:

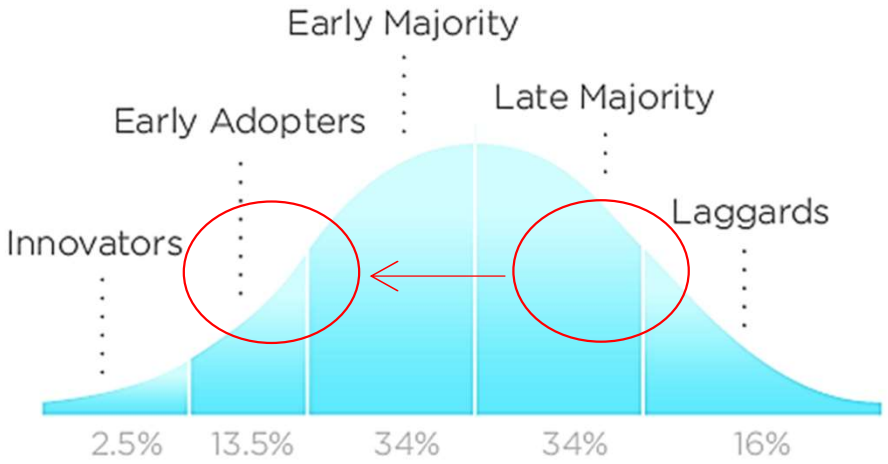
- Typically lag adopters change only to respond to changes already prevalent in the market.
- Changes are therefore intended to meet the expectations of customers, so the changes are reactive and not proactive.
- Laggards are often just matching the abilities of more change ready competitors.

Applying change management leads to adopting new technologies sooner.

Embracing change management fights against this over-emphasis on the early costs of adoption by allowing management to recognize the innovation adoption cycle.

- Companies which embrace change management benefit more from technology, and change faster in the long run, so they see benefits from new technologies earlier.

- The change management perspective sees a return on the costs of early adoption, so investment in change leads to embracing innovation.

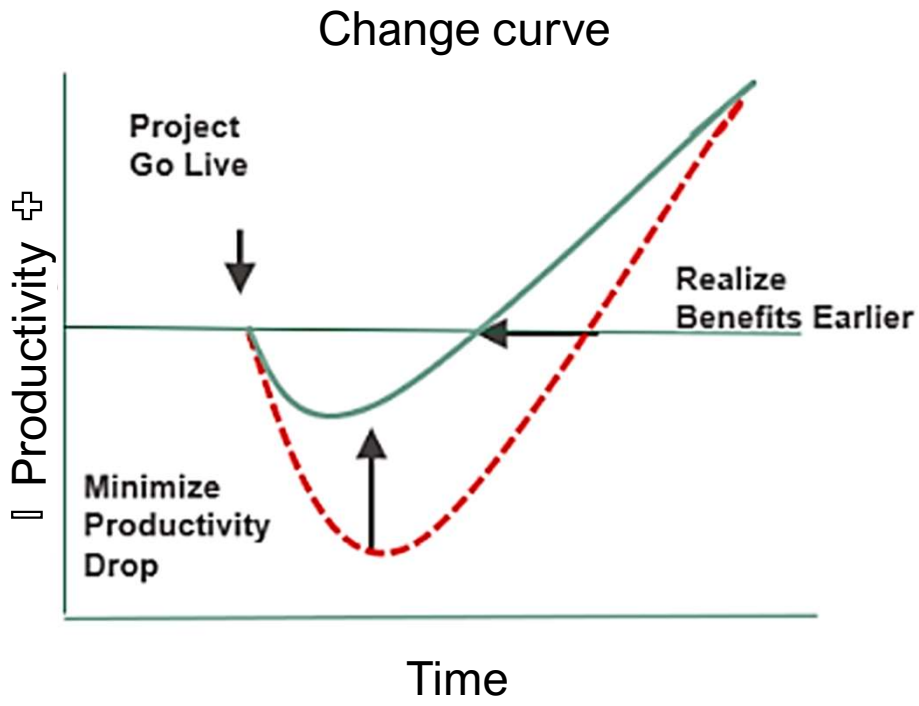


INNOVATION ADOPTION LIFECYCLE

From Wikipedia article on early adaptors

Embracing change management will minimize the productivity dip effect and better capture the benefits of early adoption.

The effect of change management acts to minimize productivity dip and the productivity benefit of early recovery.

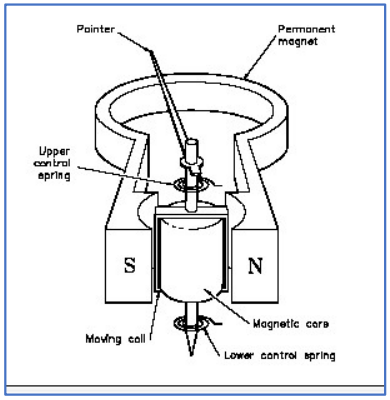


Three examples of where I would have benefitted from adopting change earlier

- For voltage testing: Analog volt meters vs digital voltmeters.
- For dry film thickness testing: Magnetic lift off gauge vs fully electronic gauges.
- GPS enabled interrupters and data loggers.

Example 1

Changing from analog volt meters to digital voltmeters

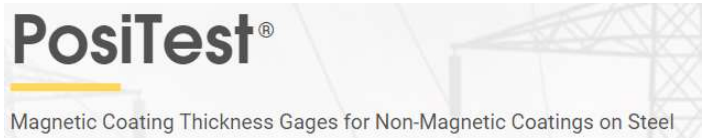


- In my early years, test instruments were purely mechical devices, requiring care because a D'Arsonval movement is a DC moving coil-type, where an electromagnet is suspended between two permanent magnets.
- Being a mechanical device, they were sensitive to shock damage by damaging the movement, the needle or the spring used to return the meter to zero, and the mechanical arrangement was susceptible to being damaged.
- Damage led to the meter losing calibration during transportation.
- Use of these meters was also complicated by the relatively large current flow through the coil, and this relatively large internal current meant that the actual voltage value required correction under some circumstances.

Example 2

Changing from magnetic lift off gauges vs fully electronic gauges for dry film testing

- In my early years, when I performed coating thickness surveys, I used a magnetic liftoff type DFT gauge, such as a Positiest.
- Looking at the DeFelsko website sees these instruments are rugged and accurate, and best of all, require no batteries to run out during long testing sessions.
- But these instruments do not have internal electronics to store data, so a second person was commonly required to write down the data as it was collected.
- Since these instruments did the job, and I had experience with other more electronic instruments running out of batteries on me, it was many years before I upgraded to more modern test instrument.



Durable

- Extra rugged housing, not affected by mechanical shock, water, acid or solvents
- Unique overall design, fully supported, positive positioning, no pivoting tendencies during measurement
- Can be used fully supported or with only the front probe area contacting the surface
- Functions on a permanent rare-earth cobalt magnet
- No batteries/electronics
- 2 year warranty

From DeFelsko Website

Example 3

Changing from manually synchronized interrupters to GPS enabled interrupters

- Since the early days of corrosion testing, the need to interrupt the current to gain Off values has been recognized.
- In the early years, rectifier units were manufactured with internal mechanical timers.
- Portable interrupters were used for surveys, so extra time was required to install and synchronize interrupters into each current source.
- Sometimes problems would occur during the testing day, where the interrupter may stop working or they may drift, so accurate off values were not obtained.
- Most concerning was that these units were relatively large and commonly required the rectifier cabinet to be left open during the survey day.
- It is only in the last few years that I became aware of how modern interrupters are small enough to fit into the cabinets, have long lasting batteries, and self synchronize using GPS.

Final thoughts

Benefits which can only be seen in the light of change management:

- Workers benefit from working for organizations which embrace change management.
- Organizations can benefit from change management by seeing early adoption as an investment, recognizing how early adoption contributes to change readiness.
- The accelerating nature of change in our modern world requires change readiness, and this shift in perspective benefits everyone by encouraging adoption of new technologies in a proactive manner.