



Operationalizing Risk Scoring to Prevent Damages

A guide to risk scoring and how
to capitalize on the benefits.

A Publication of



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CHAPTER ONE

Mitigating Risk

in the Damage
Prevention Industry

Risk Scoring

State of the Industry

In the field of damage prevention, the assessment of risks is undergoing significant advancements as a result of the integration of advanced technologies like machine learning and artificial intelligence (AI). By harnessing the power of these technologies, the industry is now able to gather and analyze extensive volumes of data, leading to improved identification and mitigation of potential risks associated with underground utility lines.

Traditionally, risk scoring in the damage prevention industry relied on manual processes and subjective judgments, which often resulted in limitations and inconsistencies. However, with the advent of machine learning and AI, organizations can automate and streamline the risk assessment process, enhancing its accuracy and effectiveness.

Why is Mitigating Risk Becoming More Important?

- **Increased regulatory pressure:** Regulators are expanding guidelines and penalties
- **Labor shortages:** Limited staff to perform work which heightens the likelihood of errors
- **Increased damage costs:** Cost of repairs has increased due to increasing cost of materials and labor
- **Supply chain issues:** Ability to effectively procure critical supplies can negatively impact repairs
- **Inflation:** Prices are steadily increasing, which impacts the costs of performing locate and construction work (requires businesses to be more efficient)
- **Infrastructure Bill Investment:** Significant increase in tickets connected to the infrastructure bill will occur in the coming years

Despite the significant potential of advanced technologies in risk scoring, the adoption rate within the damage prevention industry remains relatively low. According to data from 2023, less than 5% of organizations have embraced risk scoring in their damage prevention initiatives. There is still a significant opportunity for organizations to leverage these technologies and unlock their full potential in preventing damage to underground utility lines. Common Ground Alliance recently announced an industry goal of reducing damages by 50% in the next 5 years and risk scoring may just be the best route to success.



02

CHAPTER TWO

Framework for Operationalizing Risk Management **Part 1: People**



The more you can do to ensure the employees you hire are a good fit for the job and your company, the more you will see turnover decrease and productivity rise.”

– AEM, “Why you should prioritize employee retention”, *DigDifferent Magazine*

WAYS TO CONTEND WITH INTENSIFYING STAFFING CHALLENGES

As the job market continues to evolve rapidly, many businesses are experiencing staffing challenges like never before. From talent shortages to high turnover rates, these challenges can take a significant toll on organizations, making it difficult to stay competitive and thrive in today's fast-paced business world.

Retention

First and foremost, keep the people you have now! Make sure the current job climate and culture is good. Make sure the employees have the tools, equipment, challenges, and education that help them do their day-to-day jobs well and help them continue on the path of professional development.

Add new recruitment tactics

Find better recruiting tools and services. Check out internship and apprenticeship programs. Promote within when there is the chance.

Beef up benefits

Ensure your organization is competitive with compensation, health care, and other table stakes of a typical benefit package.

Consider offering stock options, a wellness program, or talent investment such as tuition reimbursement.

Streamline the hiring process

Make sure that when you get qualified candidates in the door, you keep them there. Do not make your process so intensive that it pushes candidates away by either the length of the process or the types of steps the candidate must take.

Employee recruiting incentives

Offer an internal employee referral bonus structure. Further encourage employees to make referrals by reiterating that there will be no judgment or other negative outcomes if their referral does not end up being the best fit.

Employee recognition

Explore creative ways to recognize employees for their hard work and successes. Competition and thoughtful prizes can be extremely effective incentives.

In conclusion, today's job market is very competitive, especially within certain recruiting verticals. This type of market requires an aggressive and innovative approach to recruitment.

Exploring Workforce Strategies

An Inquiry Into Your Staffing Plans



Is more staff needed to ensure damages do not increase as ticket volumes increase? If ticket volumes swelled by 50%–100% would your damages continue to occur at a linear rate? Would adding more staff be appropriate and needed to solve this problem? Model this out so that you are aligned with management on the potential impact here. This will also put you in a better position to ensure you are ahead of the hiring curve for when this work arrives.



Aligning staff expertise to highest risk areas: Are your most knowledgeable and capable resources always leveraged at the highest risk sites? Are your processes and technology supporting this or are your people relying on instincts to determine this?



Positioning yourselves as an attractive employer/recruiting: Are you taking any new approaches to make your organization the employer of choice? Are your benefits market competitive and are there things you can offer that could allow you to differentiate with candidates? Do we present staff with exciting challenges to solve and incentives for solving critical problems?



Upstream/downstream impact: Spend some time assessing how the third parties you leverage are being impacted by hiring challenges and how this can negatively impact your organization. For key relationships, commit to quarterly meetings with partners to understand how this is changing/evolving. Spend time with your partners discussing data sharing that can enable each other's success.

03

CHAPTER THREE

Framework for Operationalizing Risk Management

Part 2: Processes



In today's highly competitive marketplace, organizations need to have the ability to execute effective business strategies consistently and achieve long-term sustainable growth; otherwise, they'll fall behind the competition.

–Sudheesh Subhash, “Understanding Operational Excellence And The Continuous Optimization Of IT Operational Efficiency”, Forbes Magazine

With more and more tickets being created each year, what processes do you have in place to ensure you don't fall behind? Let's dive into some of the things that utilities, municipalities, contract locators, and stakeholders should consider.

HOW EFFICIENT ARE YOU?

Asset protection isn't easy. Many locators are overworked, sometimes sinking upwards of 80+ hours per week to ensure both infrastructure and excavators are safe from harm. What tools do you have in place to help streamline your dispatching and locating processes?

- **Do you screen tickets, and if so, how?**
Do you've designated ticket screeners in the office, or are locators appointed to this task? Is there consistency in screening methods from one individual to the next? What percentage of tickets are filtered before they're sent to the field? What do the numbers tell you?

- **Do you use ticket management software, and are you taking full advantage of its capabilities?**
Many solutions include options to automate workflows, such as auto-dispatching tickets to locators, tagging tickets to advise on obvious clear situations, automatic workflow adjustments for high profile areas, offline apps to improve efficiency in poor coverage areas, and so much more.
- **How are you leveraging these feature sets?**
Talk to your ticket management vendor and explore options to address pain points and create operational efficiencies. If you do not currently leverage a ticket management system, consider how doing so might enhance your team's ability to maximize productivity.

ARE YOU RETAINING YOUR EMPLOYEES, PARTICULARLY YOUR LOCATORS?

It is no secret that locating underground assets is stressful and demanding, so employee retention efforts should be a priority.

- **Do you promote a positive work environment?** It is essential that your staff feel safe and valued by their leaders. Value and appreciation increase morale, and those with high morale produce results. Consider ways to reward those who put forth the effort and are deserving, while finding ways to motivate, train, and encourage those who are not performing as well.
- **Do you promote from within the organization?** People want to experience professional success, and there's no better way to experience professional success than through growth. Provide your staff with regular opportunities to develop their skill sets and be cognizant of those with potential.

HOW EFFECTIVE ARE YOUR TRAINING PROGRAMS?

Effective training programs pay for themselves by helping ensure those responsible for identifying and marking facilities are equipped with the know-how to do so. Proper training promotes confidence. Confidence increases morale. High morale increases performance and retention.

- Are your education programs current?
- Do you encourage refresher training courses to establish consistency from your novice staff all the way up to your most senior employees?

- Does your environment foster teamwork where your junior staff have a mentor, or access to more experienced resources to ask questions and seek guidance?

WHAT TOOLS DO YOU LEVERAGE IN THE FIELD?

Possessing the necessary tools is critical to your success. Are you using what you have available to you?

- Mobile applications can help streamline processes by eliminating paperwork and allowing field personnel to work offline, while still providing most, if not all, functionality available when the user is online.
- Locating devices are paramount. Is everyone equipped with the proper tools to enable peak effectiveness? Are they properly trained on the tools they have?
- Do you have a simple solution for taking, uploading, and storing photos? Good photos that are preserved with lat/long data and date/time stamps can go a long way in proving you are not at fault in damage scenarios.

We encourage you to consider how each of these processes might change with a significant increase in ticket volume. What are the top three areas in your operation that might encounter challenges? A substantial increase in ticket flow is fast approaching, and now is the time to ensure you are prepared.



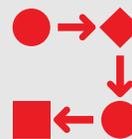
Data Intelligence:

Do you know when a high-risk ticket is submitted? Are these tickets flagged differently to initiate the appropriate risk protection actions?



Documentation:

Are higher risk scenarios well documented for how they should be handled? Is all staff well trained and familiar with protocols for these scenarios?



Automation:

Are workflows automated or is there a potential for human error? How can you leverage technology to automate workflows to avoid the potential for missed items?

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CHAPTER FOUR

Framework for Operationalizing Risk Management

Part 3: Technology



As technology evolves, so does the expectation of a zero-damage world. By providing more actionable insights into risk, ticket management companies are doing their part by empowering utilities and municipalities to make increasingly educated decisions on how to handle certain excavation projects.

– Matt Hill, Customer Success Manager, KorTerra

WHERE IN YOUR PROCESSES CAN YOUR TEAM BETTER LEVERAGE TECHNOLOGY TO INCREASE EFFICIENCY, IMPROVE ACCURACY, AND REDUCE RISK?

Possessing the proper tools is critical to success in this industry. Are you setting your locators up for success in the field? Mobile applications can eliminate time-consuming paperwork and allow locators to work offline on their own devices. If you already have these tools, are your users properly trained and educated on best practices and uses? Effective training promotes confidence and increases operational efficiencies.

With the right technology, another major time-saver is ticket screening, prioritizing, and risk scoring. How accurate is your mapping data and does your organization presently leverage mapping data to help improve locator efficiency or screen tickets where possible to eliminate unnecessary work? Ensuring your team is set up with the right technology is paramount in increasing efficiency and reducing ticket times.

TECHNOLOGY ADVANCEMENTS AND RISK SCORING

For the past three decades, the use of technology in the damage prevention space has continued to accelerate as mobile technologies advance rapidly. Many organizations have now made investments in ticket management systems to create efficiencies for their field teams around the completion of all the associated workflows attached to the 811 tickets.

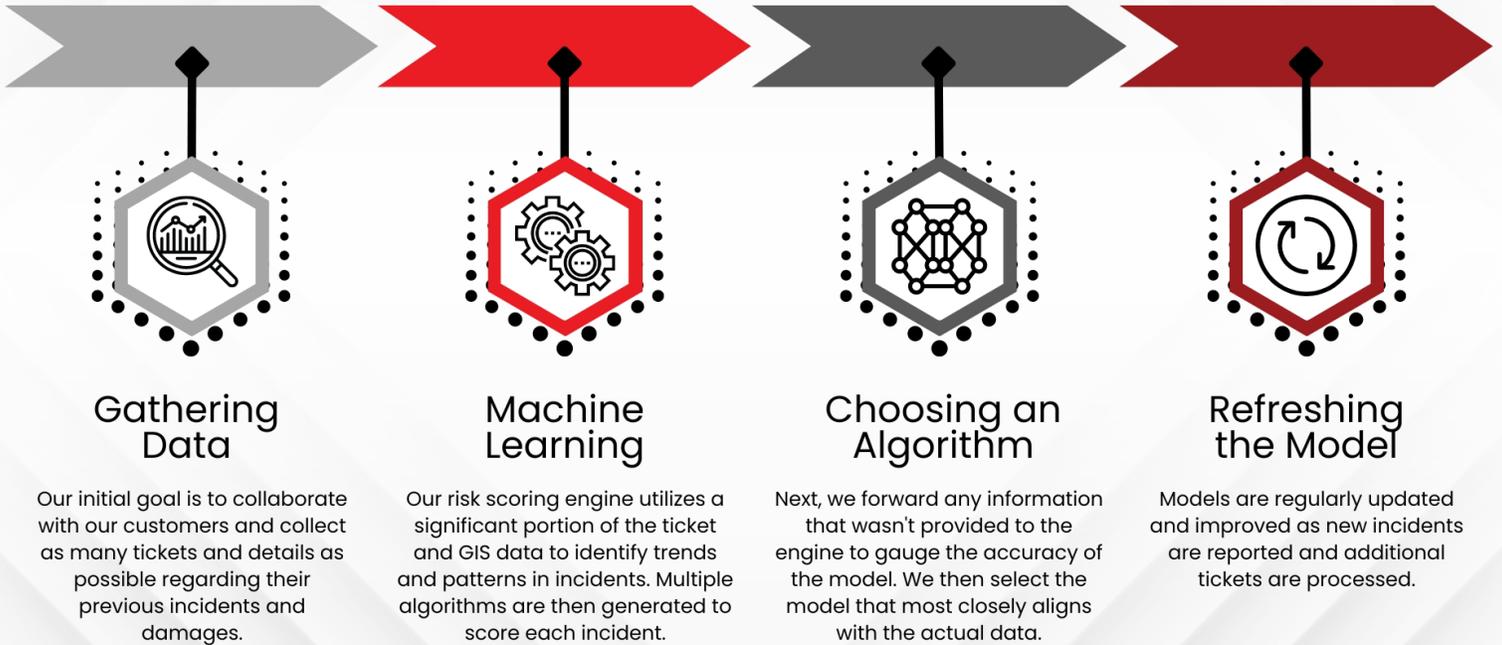
Many of us have heard the terms ‘machine learning’ and ‘artificial intelligence’ mentioned repetitively in recent years. As more data is collected and analyzed, algorithms can be refined and updated to adapt to changing conditions and emerging risks. This iterative process allows for ongoing optimization of risk assessment strategies, resulting in more accurate results. In the past several years, ticket management providers have begun leveraging these technologies in their platforms when assessing the risk profile of tickets to help better inform damage prevention efforts.

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CHAPTER FIVE

KorTerra's Approach and Putting Risk Scoring Into practice

KorTerra's Approach



A combination of ticket data, GIS mapping data, and historical damage data are applied against a machine learning model to provide an effective risk score model for each customer. The efficacy of multiple models is assessed to ensure that the best model is provided to a specific customer resulting in ticket risk scoring that is both meaningful and actionable. One of the primary challenges for most damage prevention teams is they often don't have enough staff to lean into every risky scenario.

Risk scoring is aimed at providing these teams with an elevated understanding of the tickets where the risk profile is the greatest based on historical data driven evidence. The goal of providing the scores is to elevate the highest risk tickets so that damage prevention teams can effectively prioritize their interventions.

KorTerra CRO, Jim Plasynski has spoken with nearly a hundred companies on this subject, and a repetitive message that he often hears is, 'we're looking for the needles in the haystack, but we don't have enough resources to comb through the hay to find them.' In one of his

more recent conversations, a top tier energy provider shared that with their staff they only have the resources to pursue action on the top 1% of their riskiest tickets. With this reality in mind, as risk scoring models are developed, they need to provide customers with a percentage of their tickets to pursue that is manageable.

In our work with our customers, KorTerra has consistently provided customers with risk scoring models that enable them to identify 55%-75% of damages in approximately 10% of their ticket population. What this means is that you can find anywhere from $\frac{1}{2}$ to $\frac{3}{4}$ of your damages in roughly 10%-15% of your ticket population. This type of outcome is actionable, where you can have your damage prevention teams focus their intervention efforts on the top tier of tickets with the greatest risk. If your energies are focused on the tickets that are most likely to create damages, the likelihood that you will reduce your total number of damages, the percentage of tickets where you are seeing damages, and total costs of damages year over year will improve.

Utilizing Risk Scoring

to Drive the Right Actions

Risk comprehension empowers industry stakeholders to accurately assess risks, make informed decisions, implement preventive measures, foster proactive behavior, and facilitate effective collaboration. Obtaining a risk score is only part of the process, the industry must adopt the process and trust it entirely. By effectively ingraining risk analysis into their daily activities, the industry can drive the right actions and significantly reduce the occurrence of damages to underground utilities.

PUTTING IT INTO PRACTICE: INSTANCES SHOWCASING THE EFFICIENCY-BOOSTING BENEFITS OF RISK SCORING

- In certain sectors, such as the telecom industry, it can be suitable to employ ticket screening based on specific criteria. This approach is particularly effective when the asset type involved poses a low risk of being damaged and is inexpensive to repair. For instance, low-risk assets like telecom infrastructure may undergo screening processes to determine the appropriate course of action. In cases where the asset profile presents higher risks, such as high-pressure mains, assigning tickets to experienced locators rather than new hires can ensure more accurate and reliable results.
- To enhance the effectiveness of damage prevention efforts, audits can be selectively flagged for sites with the highest risk factors rather than chosen randomly. This targeted approach enables the implementation of stronger locator training initiatives to address and mitigate potential risks more effectively.
- In risky scenarios, excavators who are new or less familiar with the specific site conditions can be identified and flagged for enhanced communication and education, ensuring they have the necessary knowledge to minimize risks during excavation activities.
- Automation plays a vital role in optimizing damage prevention workflows. By automating Watch & Protect scenarios, software-triggered workflows can be implemented to deploy the appropriate resources efficiently. This streamlined approach ensures timely response and intervention in situations that require heightened attention to prevent damages.
- The utilization of reporting and analytics tools enables organizations to track and demonstrate performance improvements over time. These tools provide valuable insights into the effectiveness of damage prevention strategies, allowing senior management to assess the progress and make informed decisions based on the data-driven results. By leveraging reporting and analytics, organizations can continuously refine their practices and enhance their overall performance in preventing damages.

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CHAPTER SIX

Looking Ahead to Your Next Steps for Implementing Risk Scoring in Your Business

Looking Ahead

Where Do You Go From Here?

If you and your organization are considering implementing risk scoring as part of your damage prevention efforts, it is essential to carefully assess the actions your team can take once a scoring model is activated. It is crucial to ensure that the provider you are working with delivers more than just arbitrary scores for your tickets. You need the scoring distribution to be designed in such a way that only a small percentage of your tickets receive higher scores. If a significant portion of your tickets are assigned high scores (around 30-40%), it is likely that you will not have sufficient resources to effectively address them, rendering the scoring system ineffective.

Collaborate closely with your provider to ensure that they can provide you with attribute data that explains the factors driving elevated risk. Being unaware of this information can hinder your ability to determine the appropriate interventions needed to mitigate the identified risks effectively.

Lastly, it is important to establish clear and actionable guidelines for your damage prevention teams based on different risk scenarios. Whether you are working with internal locators or third-party contractors, it is crucial to communicate the nature of the risk associated with each scenario effectively. This clear communication enables the implementation of preventive measures that are tailored to the specific situation, reducing the overall risk of damages occurring.

Focus on people, processes, & technology to form a strong foundation

- **People:** Do you have the right number of staff and the right expertise and tools to support your staff to be successful in the time ahead?
- **Processes:** Focus on documenting and modernizing processes now that prioritize the highest risk scenarios
- **Technology:** The data is there to better inform damage prevention efforts. Invest now to ensure you are leveraging this data in meaningful ways to create the best outcome possible for your organization.



Interested in learning more?

Get Started Today.

Chat with one of our National Account Executives and discover how risk management can help you increase visibility and safety within your company.

Let's Connect!



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