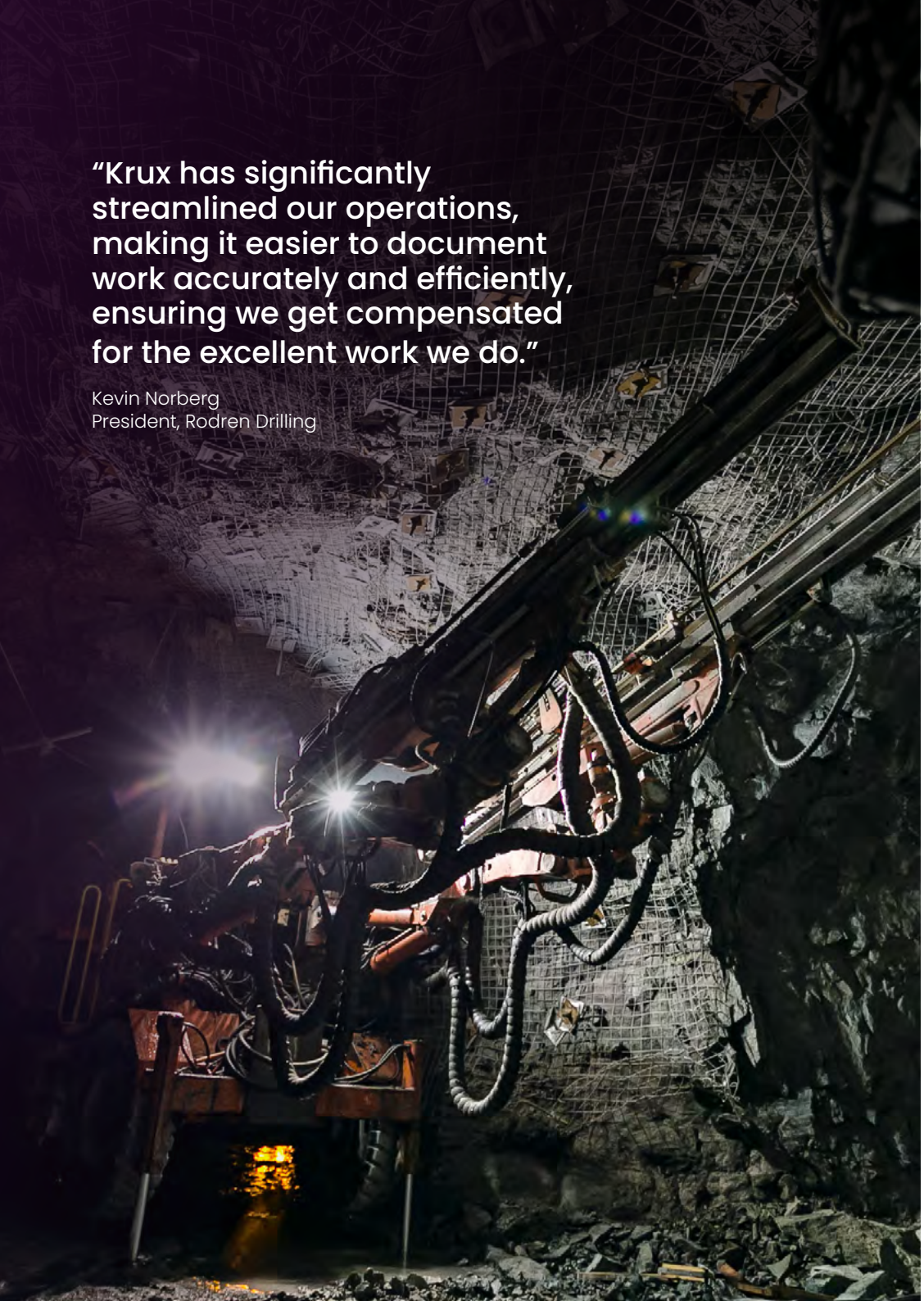
Krux

The Krux Analytics Guidebook to:

Optimize Your Drilling

All the ways that better organized and analyzed data can enhance your drilling and boost your business.



Drill smarter. Get paid faster. Stress less...

Service providers and resource owners have tough jobs with complex challenges and heavy demands on their time.

Better use of the data that flows through their operations can fix many of those issues. But gathering data accurately, analyzing it effectively, and ensuring it’s compatible and accessible throughout your business is not always straightforward.

> “With Krux we were achieving more meters. Every metric that you could look at, from standby time, which we reduced from 66% to 46%, or downtime, which we took from 9.5% down to 6.1%. Everything you could measure was improved.”
>
> **Patricia Frisch**
> Senior Geologist, Barrick Gold Corporation

Get it right, and you can drill more productively, be paid faster, and boost profits. Get it wrong, and, well...

Our job at Krux Analytics is to get it right for you. To make it easier for service providers and resource owners to extract the maximum value from their data, big company or small.

That means fully optimized drilling, less time spent on reconciliation, significant reductions in downtime, fewer errors, and faster invoicing. And that’s just the start.

Krux software makes all the above easier to achieve, all while optimizing ROI.

In this guidebook we’ll take a look at four of the biggest data challenges, the impact they have on productivity and profit, and how to overcome them with the help of Krux.

Contents

Jody Conrad
CEO, Krux Analytics

Throughout this guidebook, we'd like to show you ways that Krux can support you to turn your untapped data to your advantage.

"Drilling and mining operations today generate an incredible amount of data.

"That can be at the drilling site - through sensors, IoT devices and digital systems but also back in the office in terms of analysis, reports, and invoicing. It may all be very different, but every bit of it counts.

"Because no company can be truly successful, or fully prepared for the future, without ways of bringing all this data together, and making it work harder and smarter for them, from one end of the business to the other.

"Much of the time, however, this crucial information can sit unused, trapped in outdated processes, and misunderstood by the teams who rely on it to make critical decisions. Or it may be captured ineffectively or inaccurately, and fall through gaps in the workflow when it could be adding value.

"The opportunity cost of this hidden potential is enormous, both financially and strategically. I've seen first-hand the transformation that occurs when a company embraces data; the "lightbulb moment" when leaders realize the millions of dollars sitting untapped in their systems.

"Conversely, the financial loss from inefficiencies can range from $20,000 to $250,000 monthly per rig. Globally, this adds up to billions in wasted revenue every year—a staggering number that highlights a fundamental issue: most mining companies simply don't know what to do with the data they already have.

"Or perhaps more importantly, they don't have the help that could make that data contribute directly – and dramatically – to their bottom line.

"Individually we have solutions that can address data standardization and centralization, ensure the optimization of your drilling rigs and operations, simplify invoicing and reconciliation, improve collaboration and the productivity of your teams, and accelerate payments.

"Each delivers a powerful answer to a perennial challenge in drilling and mining. But by getting them all working together, your business can rewrite how it uses data across your entire operation. How it turns the information you didn't know you had into profits you didn't know you could make.

"Because this conversation is bigger than any one product. It's about a mindset shift — a commitment to innovation, efficiency, and growth. And Krux can be there to support you."

> "If there's value hiding in your data, even at the microscopic level, we'll find it for you."

Krux in action

As just one brief example, an enterprise mining company Krux worked with improved their operational efficiency by 40% within six months, simply by integrating real-time analytics into their workflows. They were able to identify standby issues caused by their operations, and realized that one of the drills within the blast area took too long to move. By switching that rig to different holes, and assigning a faster rig to drill closer to the blast, they significantly improved efficiency. This meant faster decisions, optimized resource allocation, and achieving the required drilling program meters more consistently. These stories are not rare—they are the new standard for companies willing to adapt.

So why don't more companies embrace their data?

Despite these benefits, many mining companies remain hesitant to adopt new technologies because the problems seem "not big enough" to demand immediate attention. Leaders tell themselves that moving to data-empowered working is too complicated, won't show worthwhile impact, and anyway, there'll always be time to try it later.

First, it's not complicated. We can make it easy, intuitive, natural and 'normal' to your everyday operations, in all parts of the business.

Second, we can show you how even marginal changes to data utilization can lead to significant gains in productivity and profitability.

And third, can you afford to bet that by the time "later" arrives, your competitors won't already have taken the lead?

What you get out is only as good as the data you put in

Integral to the success of Krux software is the focus we place on high quality data; collecting it accurately, protecting it from errors, and maintaining its condition and excellence throughout the data chain.

The robust structure of our database is the foundation to everything we do, and one of the secret ingredients to why we have the best and most insightful analytics. It means we are able to interrogate and slice that data down to the smallest data point.

Why should my business worry about **Standardized Data**

Because...

- You'll get your invoices paid faster with less hassle
- You'll waste less time on reconciliation
- Projects will be managed more accurately
- There'll be fewer errors and inconsistencies
- Your teams will stay focused on what matters most

THE CRITICAL PAIN POINTS

A lack of standardization in data entry and contract interpretation can lead to inconsistencies in billing and project management, with supervisors misunderstanding or misapplying contract terms. Manual spreadsheet systems can cause significant delays in reconciliation, and lead to organisationally paralyzing levels of email traffic to put right.

Tom Thompson
Global Customer Success Manager, Krux Analytics

Something we often encounter with large mining projects is that geologists are receiving their drilling data in all sorts of formats – spreadsheets, WhatsApp chat messages, and, of course, that old standby, paper...

"When data isn't standardized, it makes it difficult to know what was truly going on during a shift, and therefore much harder to compare apples with apples between the contractors.

"The result? Tons of time-wasting manual data interpretation and entry, rather than geology. It also leads to longer reconciliation times, and a regular back-and-forth between companies and their contractors at the end of the month. For drillers, that means more red money while they wait to get paid.

"With Krux, standardizing that drilling data is easy. For example, activity naming can be set up and standardized by a drilling contractor, so the activities you're examining for one of your contractors are the same as the others. Apples with apples. Drilling contractors that use Krux for multiple resource clients can tailor the activities that their workers see in our app by limiting them to specific contracts, so they always get the best way to record their time. Also, this can limit the number of extra activities they see, which reduces entry time, errors, and report editing.

"Once the data is submitted, we have easy-to-use lists that are widely filterable, with numerous ways to navigate through the DSRs to review and approve them. The system also provides automatic validation error checking on the data, providing the approver with an immediate snapshot of potential issues like gaps and overlaps in drilling, and mismatched worker hours.

A better perspective on the data that drives your business

"Quick links inside the DSRs allow the user to go to the hole page and see all the drilling data associated with it, which speeds up correction times, reconciliation, and approval.

"There are also dashboards that track all the expected reports coming in, which gives both mining and drilling clients a terrific bird's-eye-view of what data has been submitted and approved, and what is missing. There's no more digging through piles of paper, wondering where that missing report is.

"Having the data all in the same format and in the same place allows the user to quickly find out what is going on for a certain drill or certain hole, at any time. All of which means deeper, faster insights into your drilling and drillers, less time wasted, and more time for your valuable team to dedicate to geology rather than paperwork."

"No more digging through piles of paper, wondering where that missing report is."

> **Krux has significantly streamlined our operations, making it easier to document work accurately and efficiently, ensuring we get compensated for the excellent work we do.”**

Kevin Norberg
President, Rodren Drilling

Rodren Drilling were running into significant problems with manual data entry and a lack of standardized contract interpretations. They adopted Krux to streamline data entry, using pre-defined options to reduce errors and boost consistency.

They quickly witnessed a substantial reduction in overall project reconciliation time, from up to three months to just a few weeks, as well as a drastic reduction in email traffic and manual errors.

Field and office teams had more time to concentrate on core tasks rather than administrative fire-fighting. Billing improved, ensuring Rodren were paid faster and more accurately for the work done.

Supervisors found it easier to document their work, leading to increasing accountability and consistency across projects. Even team members with less developed digital skills quickly took to Krux user-friendly interface.

KruxLog
what customers like

Fast and easy data entry

- Field data is captured digitally through an easy-to-use app, available on any mobile device or laptop.
- Built-in validations and pre-populated fields ensure data is captured correctly and in a timely manner.
- An offline mode allows data entry even in low-connectivity areas or underground. Data syncs automatically to the cloud once a connection is restored.

Configurable contracts

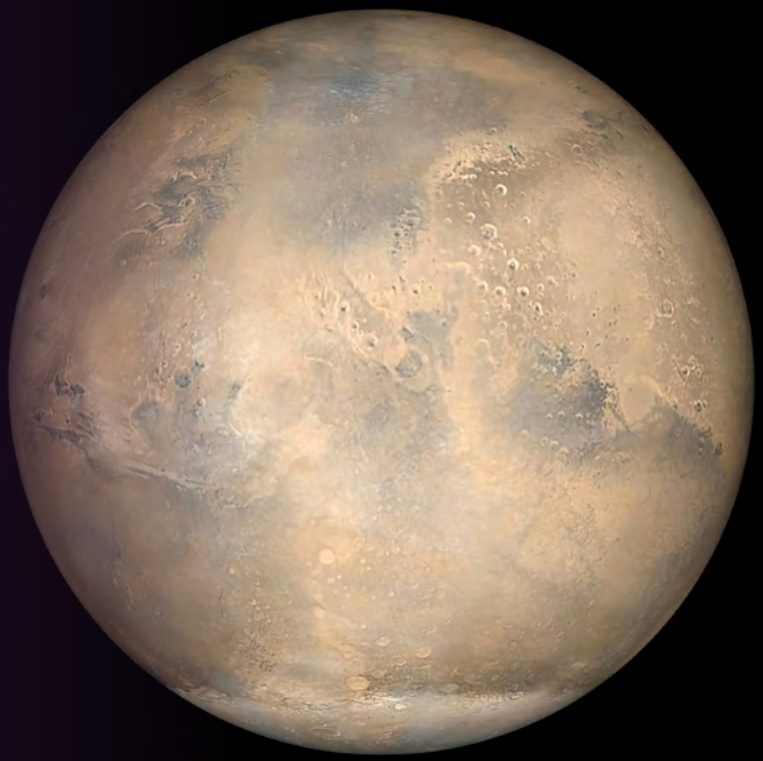
- Flexible contract configurations make even complex agreements straightforward.
- Billing and tracking of activities, equipment, consumables, and more are all directly linked to shifts, drill holes, and rigs.
- An approval and validation process allows both parties to confirm rates, ensuring transparency and accuracy in calculated outputs.

Payroll and billing reports

- Automated billing reports are generated from approved data, streamlining the invoice reconciliation process, so reducing discrepancies and lowering administration time.

THE ADDED ADVANTAGE

A centralized digital platform means that all stakeholders – drillers, supervisors, finance teams and more – now have access to the same accurate data. This single source of truth, supports faster and more confident decision making, even with the largest drilling campaigns.



A simulated view of Mars by NASA

Is this the world's worst data standardization error?

Even a huge, high-profile project, with a **$125m budget**, can fall foul of the simplest standardization mistake.

On December 11, 1998, NASA's Mars Climate Orbiter crashed into the red planet because engineers had not converted imperial measurements into metric.

Remarkable, but yes, it happened. Lockheed Martin Astronautics in Denver, which built the Orbiter, used inches, feet and pounds. NASA's Jet Propulsion Laboratory employed metres and millimetres. JPL Engineers misread pound-seconds acceleration measurements for newton-seconds. Across the spacecraft's **461-million-mile flight**, the disparities were enough to throw the probe off course, so it ploughed into the Martian atmosphere at too steep an angle, burning up.

John Pike, Space Policy Director at the Federation of American Scientists, later said that it was difficult to imagine how such a fundamental, basic discrepancy could have remained in the system for so long, adding, "it's going to be the cautionary tale until the end of time."

However, some data mishaps have happier endings. During his 1492 voyage across the Atlantic Ocean, Christopher Columbus forgot to convert the Arabic miles used by his Persian cartographer to the Roman miles applied by his crew. Consequently he didn't land in Asia, as planned, but instead discovered a little place called America...

Why should my business worry about **Optimized Peformance**

Because...

- You'll see what's happening in the moment, not days or weeks later
- The reasons for delays can be established more rapidly before they get worse
- Teams can quickly identify the best bit for the job, and maximize drilling
- You'll reduce downtime and plan maintenance more effectively
- You can compare the efficiency of rigs, crews and drillers faster and more accurately

THE CRITICAL PAIN POINTS

Mining and drilling teams often lack real time visibility into shift performance, drilling progress and equipment usage. Keeping an accurate track of costs and progress – planned against actual – becomes more difficult. It's also harder to identify the most efficient drillers (or those that may need more help or training), and make the decisions that maximize productivity and profit.

Optimization:
EXPERT EDIT

Alex Parker
Drilling Optimisation Specialist,
Krux Analytics

Having the best bit for the job, means drillers can minimize the time they spend changing bits and maximize drilling rate. Through their Daily Shift Reporting, Krux can monitor drill bits, equipment, fluids, rigs, crews, and time.

How Krux helps **service providers**

Optimizing drill bits

"To keep track of the condition and performance of your drill bits, data can be displayed as bits used, meters per bit, or drilling rate per bit, as well as identifying the bit model and manufacturer, and the individual driller and rig. This can be invaluable in helping companies optimize which bits are performing best, as well as the rig/driller using those bits in the most productive way. The data can keep you up to date on the most efficient drill crews.

Monitoring equipment

"Recording rig engine hours brings a number of benefits. You can plan regular servicing more easily and accurately, and being able to see rig engine hours against penetration rates can alert you to whether a particular driller or rig is struggling in performance, and how that might be related to engine hours.

Keeping track of fluids

"Krux can closely track water/fuel usage, and the data can be plotted against engine hours, meters, driller or rig, enabling admin staff to see if any rig or driller is using more fuel or water than expected. This might be a security issue, or something related to rig servicing.

Comparing rigs and crews

"Comparing the efficiency of rigs, crews and drillers over time will tell you where there might be good opportunities to add training that could boost drilling efficiency and productivity.

Avoiding downtime

"Any contractor delay can be broken down and visualized in numerous ways, allowing managers to focus on and minimize downtime to maximize profits.

How Krux helps **resource owners**

Understanding standby

"Daily Drilling Report recording in Krux helps companies monitor contractor performance and internal efficiency, with data that is easily visible and understandable to people who may not be directly involved in day-to-day drilling.

"Standby is the most important category here, with many companies paying for large amounts of standby each month, with little ability to understand what it was for or how to correct it.

"Krux provides a comprehensive breakdown of standby - sub-categorized in any form the customer prefers - which enables important decisions to be made that can shift the status quo and reduce standby time and cost.

> "It's not unusual for large variations between rigs and crews to be observed, but understanding why can be difficult to visualize with older systems."

Monitoring driller and rig performance

"Establishing a firm grasp of rig, contractor, and driller performance is another vital tool for miners, where they can see performance comparisons, in terms of drilling rates or costs. It's not unusual for large variations between rigs and crews to be observed. Understanding why can be difficult to visualize with older systems, unless companies go to a lot of effort and expense to build their own datasets and graphics.

"Krux does that job for them, making it easier and more intuitive to decide, say, which rig needs to be moved off site for poor performance and examined, or potentially serviced."

> **With Krux we were achieving more meters. Every metric that you could look at, from standby time, which we reduced from 66% to 46%, or downtime, which we took from 9.5% down to 6.1%. Everything you could measure was improved."**

Patricia Frisch
Head of Mineral Resource Management,
Barrick Gold Corporation

In a project to expand a mine and add five to seven years to its lifetime, Barrick Gold Corporation were running into issues of high variability in F1 reconciliation, and a fundamental gap in ore body and drilling knowledge. With four contractors, 28 rigs, and a two-year timeline to get the project done, it became vital to build a better understanding of their data and optimize their mining.

In a collaboration with Krux, Barrick implemented a data analytics solution and enhanced its drill program and execution. Within two quarters of collecting data, Barrick was able to identify and take actions that optimized mining operations and improved productivity in a wide range of areas.

Krux was able to assist in identifying top-performing rigs, maximizing meters-drilled, reducing standby time, discovering shift report discrepancies, and increasing operational revenue.

"What I was looking for was why was the drilling slow, were we on track, could we get 125,000 metres in the next two years?" said Patricia Frisch. "We needed to know that in order to make the right decisions about this potential expansion

"One of the first huge benefits I saw is that when you tie your contract to your drilling metrics, you actually get dollars associated to every activity. In the first few hours we were able to identify thousands of dollars of errors. We were really excited, not just about the accuracy, but about suddenly getting insight into areas we previously had no perception or understanding of."

Watch the full case study

KruxAnalytics
what customers like

Plan vs. performance

- Monitor drilling performance against your plan.
- Track costs per meter, against budget and forecast with confidence, based on actual drilling results.

Advanced analytics

- Analyze drilling data across your entire organization, with pre-built and customizable dashboards.
- Gain insights into non-drilling activities, compare bit-on-bottom times, and track rig performances, ensuring optimal rig and hole pairing.

Detailed hole analysis

- Krux tracks all your data by hole and depth, giving you true in-depth analysis, providing insights into changing efficiency and penetration rates while correlating drill costs.
- Integrate survey data seamlessly via our IMDEXHUB-IQ integration, or export data into Seequent's Leapfrog, to view penetration rates and drill costs against geological models.

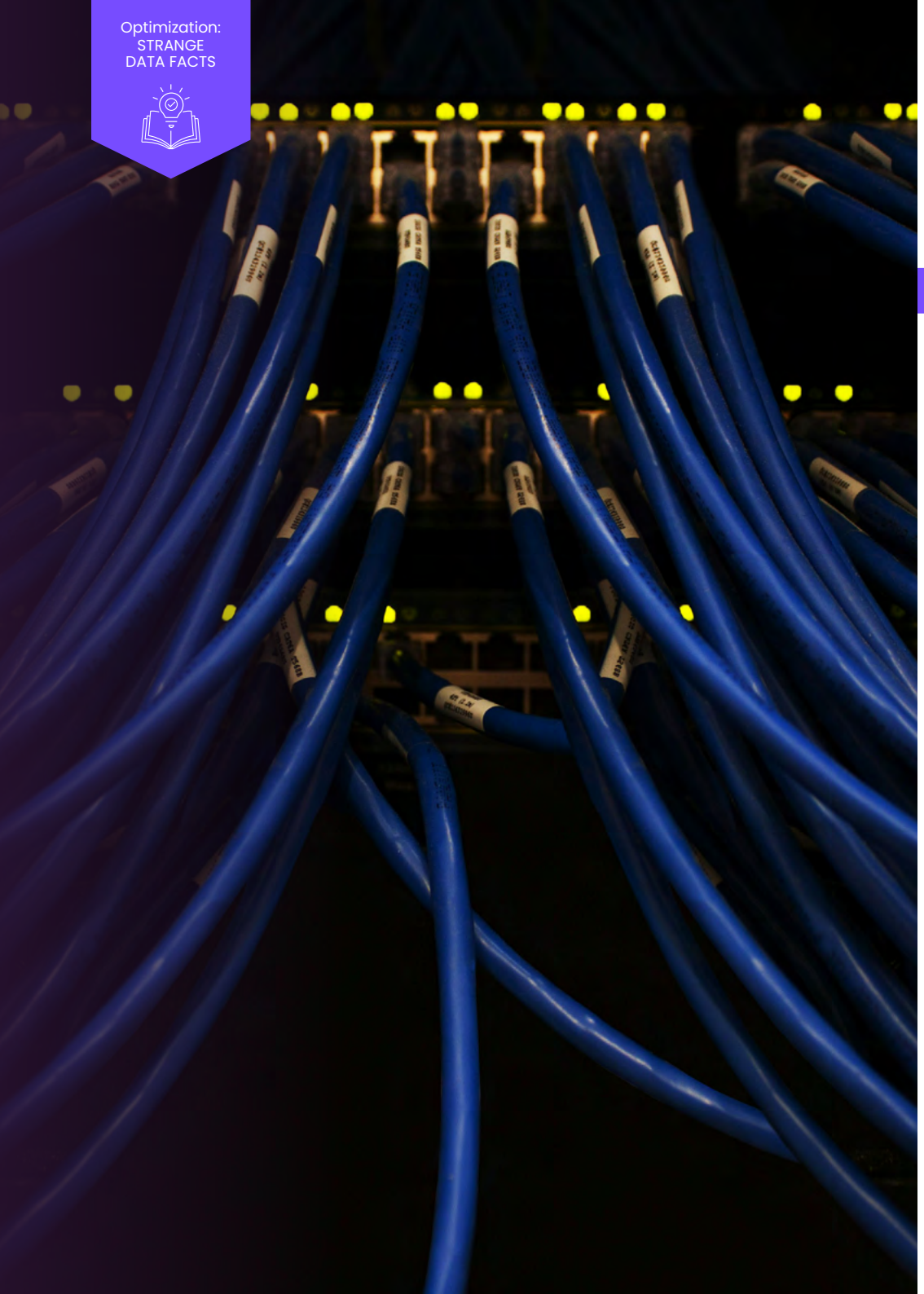
Integrate seamlessly into operational systems

- Seamless API integrations enable smooth data transfer across multiple data platforms.

> "You can go on the computer daily and check what actually happened that day rather than trying to remember it two weeks later."
>
> **Aaron Hutchins**
> President, Critical Discoveries

THE ADDED ADVANTAGE

Real-time cost reconciliation. A robust and transparent approval process between Service Providers and Resource Owners, ensures drill data is checked, validated and approved, reducing invoice reconciliation time.



How much data are we dealing with?

As anyone who works in the mining industry knows, we live in a world where the amount of data we all deal with is growing at an extraordinary rate. But exactly how quickly?

In 2024, the global volume of data hit just under 150 zettabytes, and is projected to reach 180 zettabytes this year. (A zettabyte is 1 billion terabytes.) Much of that is driven by the explosion in internet connected devices – something our industries will increasingly need to embrace.

In 2018 the global total stood at 33 zettabytes: 59 in 2020. By 2028 it's expected to be approaching 400 zettabytes. The acceleration is extraordinary (a 60% compound growth predicted for the near future). The sheer quantity even more so. If each individual byte was represented by a 3mm thick coin, a zettabyte stack of them would extend for… wait for it… 2,550 lightyears.

Around 400 million terabytes of data are thought to be generated every day, a fair portion of that appearing in 375 billion emails (yes, that's every day), 500 million posts, and some ¾ of a million hours of YouTube video. Please don't ask how much of that is dedicated to cats.

5 ways Krux delivers

Easier invoicing, simpler reconciliation, faster payments

By automating, organizing, and verifying large amounts of field and operational data, Krux can help customers streamline their invoicing and reconciliation, meaning service providers get paid faster thanks to report validation and fewer irregularities in billing.

1 Automate your data capture

Krux collects field data directly from teams in the field, straight into the Krux app, and works in real time. This reduces errors arising from manual data entry, and gets vital figures into the system immediately.

2 Centralize your data management

Krux centralizes all data within one digital platform – a single source of truth. This makes it easier for finance and accounting teams to access consistent, standardized records.

3 Quickly validate and approve workflows

Before invoicing, Krux enables checks at multiple levels (field supervisor, operations manager, accounting team) to validate and approve that the work performed matches contract terms, pricing agreements, and field documentation.

4 Enable faster and more accurate invoicing

With clean, validated, and approved data readily available, companies can generate invoices more rapidly, reducing billing cycles from weeks to days.

5 Achieve seamless reconciliation

By being able to spot discrepancies early - before the customer disputes a bill - organisations can reduce invoice rejections and the cashflow delays they create.

The End Result

"Krux can reduce revenue leakage, accelerate billing cycles, improve cash flow, and strengthen customer trust by ensuring that invoices are based on accurate, verified field data captured digitally."

Natalie Walker
Customer Success Specialist, Krux Analytics

Invoices have been with us for a very, very long time...

In fact they are considered one of the earliest forms of written record, originating in Mesopotamia **more than 5,000 years ago**, when merchants recorded sales on clay tablets. Just last year, archaeologists working in Turkey's Hatay province discovered a clay tablet with cuneiform writing that could be the oldest surviving sales receipt. It dates to the 15th century BCE, and documents the purchase of a large quantity of wooden furniture.

Earlier still were tally sticks, a physical record of numbers, scratched onto animal bones. The Ishango Bone, just such an item, was found in the Democratic Republic of Congo. It's more than 20,000 years old.

The oldest invoice in modern history still in existence was written by Dutch artist Hieronymus Bosch in the 14th century, asking for a payment of "36 pounds" from the brilliantly named King Philip The Handsome for Bosch's 1504 painting *The Last Judgment*.

Finally, **the longest** sales receipt in the world is said to have come from Hercules Fancy Grocery in New York. Hercules Demetratos, the owner, was about to go out of business unless he could pay off his debts. Word spread, and a group of saviours turned up with a collection of cash and bought every single item in the shop – more than 3,000 of them. It took Hercules six hours to ring up each sale on his cash register. The bill came to $18,871.93, and the final receipt was more than 57ft long. Sadly the store still went out of business a few months later. However, incredibly, not only does the actual receipt still exist, but it's on sale on eBay if you've got around $19,000.

Why should my business worry about **Software that supports better collaboration**

Because...

- You'll break out of the silos that constrain your operations
- You can get competing data formats working as one
- Multiple teams can collaborate more easily across different disciplines
- Workflows will be more efficient, keeping data cleaner and more reliable
- You can speed up approvals and decision making - and get paid faster

THE CRITICAL PAIN POINTS

When an organisation uses numerous software solutions across multiple teams, it invariably causes problems. Constantly translating data between different formats slows progress and introduces errors. Workflows stutter and collaboration struggles. The data needed for rapid decision making may be in the wrong place and of the wrong type. Vital parts of the organisation find themselves left out of the loop as bringing their specific software into the mix requires too much effort.

Collaboration:
EXPERT EDIT

Jen Biddlecombe
Regional Director,
Krux Analytics

Drilling and mining are hugely complex industries, requiring a wide range of technical skills – wider, perhaps than almost any other sector that deals with the subsurface. Easy collaboration across these fields and their software is critical for businesses to thrive.

"From highly specific geotechnical expertise, to engineering, to invoicing and finance, a successful operation must bring together all these disciplines and more to make plans, address challenges, and deliver profit.

"Collaboration is a key but often overlooked part of the equation, made more complex not just by the skills involved, but by the different software and solutions adopted by each one. Drillers may use Excel, WhatsApp and IMDEXHUB-IQ. Geos need modelling database solutions such as Leapfrog, maxgeo and acQuire. Engineers require mine planning, database solutions, and an array of ongoing mine management systems. The finance team will likely also use invoicing and payroll management systems, or simply Excel.

"Within mining, multiple teams using multiple solutions can cause a series of problems. Workflows become slow and clunky as data is transferred, translated, and re-inputted manually, not just once but several times. Errors invariably creep in as different data formats have to be reconciled with each other – human error being one of the worst culprits. Data becomes less reliable, and teams are more reticent about basing judgements on it. Decision making slows down.

"But perhaps most damaging of all in the long term is how the hassle of shifting data between solutions encourages teams to work in silos. And that's not good news. At best, collaboration declines; at worst it disappears altogether as it's just too much hard work.

"Krux is designed to be fully integrated in your workflow – *any* workflow - so results are accelerated and decision making made easier. Whether by its direct integrations (with, say, IMDEXHUB-IQ, Imago, maxgeo and more), or our open API, or to integrate with other systems like acQuire, Krux removes silos, reduces versioning errors and speeds up access to approved, clean, robust data. That data becomes available faster and can be accessed more easily by everyone, which consequently reduces admin time, and helps teams concentrate on the real job, rather than crunching uncompromising formats from one piece of software to another.

"In drilling companies, the busiest team – the drillers themselves – will be the source of the majority of data that flows through the rest of the operation. It's the data the business relies on most to deliver a profit. But every team within the organisation may use that data in a different way. It will go to supervisors, analysts, managers, finance teams, even payroll, and of course, clients, each searching for a unique meaning or insight. However, every time that data may be reshaped and made to fit another piece of software, and there is the risk that its accuracy or integrity becomes distorted, and those insights weakened as a result.

"In day-to-day use, Krux's easy integration into internal workflows simplifies, and speeds up the DSR process from its entry point onwards, and provides an integrated workflow with other downstream solutions via our open API. Data stays clean, workflows are simplified, approvals are sped up, teams get paid faster.

> "Perhaps most damaging of all in the long term is how the hassle of shifting data between solutions encourages teams to work in silos. And that's not good news."

"Krux removes the requirement to chase down DSR submissions. From your desk, you know right away what has been submitted or what is missing. No need to scroll back through WhatsApp, your inbox, or your in-tray; everything is completed through Krux. (We've seen reductions in time from three days to less than 24hrs.)

"Meanwhile drilling supervisors save time checking or editing DSRs before they are handed over to the client. Adjustments can be made quickly and easily on the platform, all tracked and auditable, with no need to adjust spreadsheets or separate reports.

"Monthly reporting can all be completed within Krux, with no need to use Excel, which requires regular manual updating. Custom dashboards are updated as soon as data is approved."

The advantage of clean, consistent, smooth flowing data.”

William Ward
Operations Manager,
East Africa, Capital Drilling

Before adopting Krux, Capital Drilling faced significant operational challenges stemming from fragmented systems and inconsistent data entry. The company relied on multiple platforms, which led to frequent human errors that disrupted data integrity. These issues had a cascading effect, complicating data tracking, delaying invoicing, and ultimately impacting payment cycles and operational efficiency.

“Some of the challenges we’re faced with involve running multiple systems, whether Excel based or data based, onto a platform. The human error aspects of putting in incorrect names, an extra space, a zero instead of a ‘o’... Even slight changes create new data for a new hole, then you spend hours trying to go back and manipulate that data and track it back to the actual hole.

“It all has a roll-on effect. When those mistakes are not captured the next day or next week, that can roll into the invoicing process. Then it goes to the client, they send it back, it delays invoices, delays payment, and causes a lot of frustration.

“Moving from our old system to Krux has seen a far more streamlined approach. The data is cleaner, it’s approved, the client signs it off, and you can move on to the next day.

“Having such clean data has allowed our project managers to focus on operational requirements. Instead of sitting there for hours and hours trying to clean up data, they can actually go down to the assets and the rigs, sit with the drillers, fine tune the drillers, and ultimately generate extra revenue.”

Watch the full case study

Krux and collaboration:
what customers like

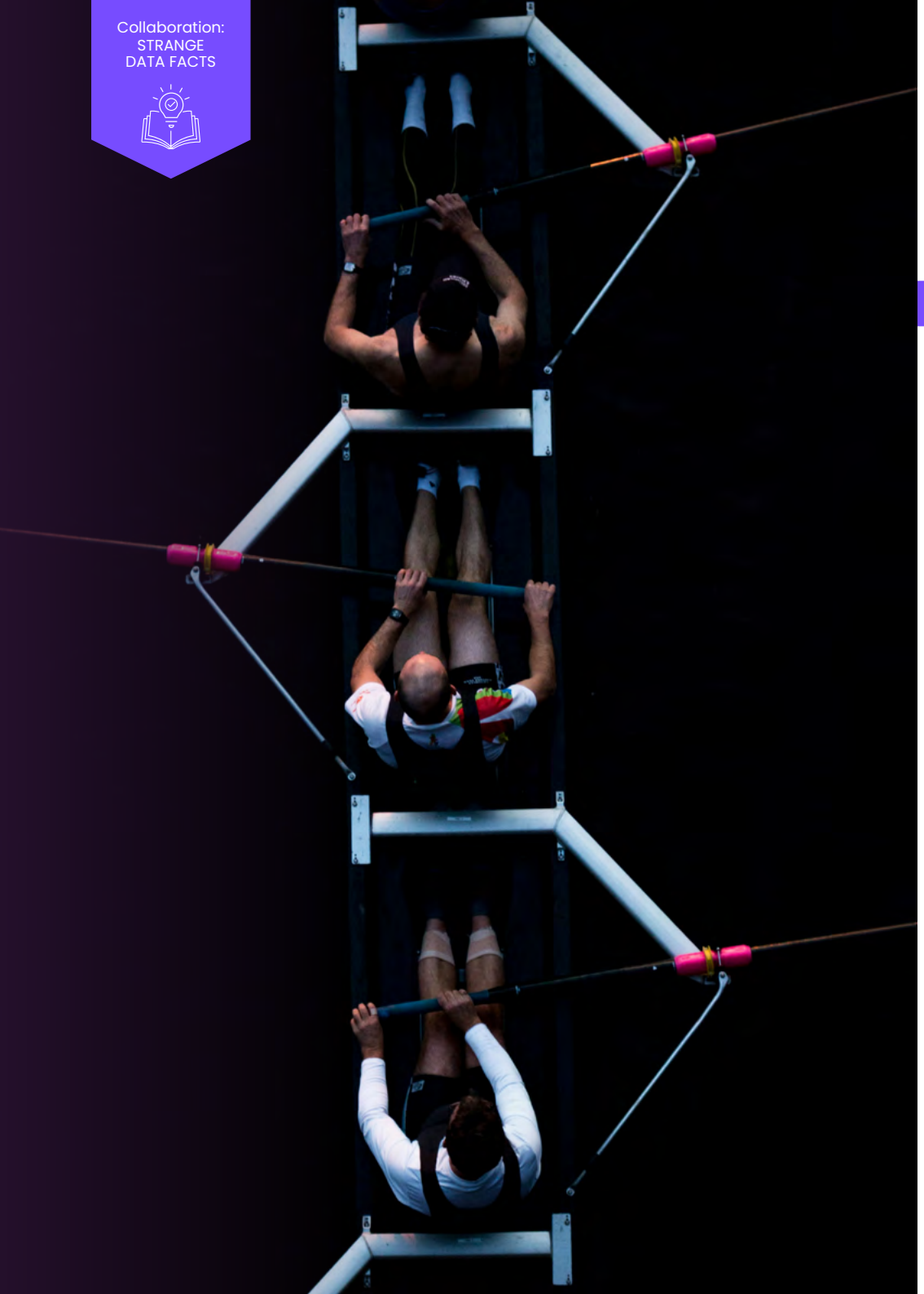
Below are some time savings from a recent case study that show the type of administrative and collaborative benefits felt after Krux implementation for an example customer.

Task/Activity	Reduction in time spent %
Chasing report submissions	100%
Entering timesheets into Database/Spreadsheet	13%
Fixing database errors	25%
Monthly invoice reconciliation	50%
Utilizing multiple system to get information	100%
Building reports for management (weekly)	17%
Building reports for management (monthly)	8%
Building report for weekly contractor meetings	11%
Checking and upload survey	8%
Upload drilling plan	17%
Monthly checks (drilling plan)	25%
TOTAL TIME REDUCTION:	**42%**
Delay time from activity date to submission date (from 3 days to <24hrs)	33%

> "It's allowed our project managers to focus on operational requirements... it gives them more time to actually go down to the assets, to the rigs, look at the training, enhance our training needs, sit with the drillers, fine tune the drillers... and generate extra revenue."

William Ward

Operations Manager,
East Africa, Capital Drilling



Every great collaboration has its first moment

Larry Page and Sergey Brin met at Stanford in 1995, when Brin, already a graduate, was given the job of showing newcomer Page around. Initially an unlikely pairing – Brin forthright, Page quiet and methodical – the two bonded over Page's scheme to bring order to the mass of documents on the then nascent World Wide Web. Polymath Brin became fascinated by the mathematical complexities of Page's BackRub project, designed to crawl through the estimated 10 million documents to be found on the internet at the time. Their collaboration solved a challenge that should have been way beyond the resources of two graduates, (and indeed, vigorously tested Stanford's computer infrastructure.) It eventually led them to realise there was potential for a search engine more powerful than anything previously imagined. And today we have Google.

Microsoft founders **Bill Gates and Paul Allen** met as teenagers at Seattle's Lakeside School in the late 1960s, both already obsessed with computers. The nearest they could get was the school's teletype terminal. Gates remembers that using it was expensive. "$40 an hour! The only way for us to get computer time was to exploit a bug in the system." They were eventually found out, but that "we got busted" moment set the course for one of the world's most impressive technological partnerships. "We worked out a deal with the company to use computers for free if we would identify problems," says Gates. "It was our first official partnership."

"We work with geologists who try to understand what happened over a billion years ago. That's hard enough...

"Krux has allowed us to actually find out what we did three weeks ago, and document it in real-time to make our lives easier.

"If I need to figure out how many meters we drilled in 2024, it's two clicks of a button. Previously that would have been half a day of somebody sitting at a computer trying to figure it out.

"That's progress."

Kevin Norberg
President, Rodren Drilling

If you'd like to find out how your operation can make the same progress to a data-driven world, contact us at sales@kruxanalytics.com

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