CRYSTAL
TECHNOLOGIES GROUP, INC.

MAXIMIZING UCAAS BENEFITS:

HOW TO CALCULATE TCO

UCaaS vs. On-Premise Systems

The success of any business depends on all parts of the team being able to communicate effectively and efficiently. Today's perpetually connected and increasingly mobile workforce has brought the importance of reliable, multi-channel communications to the forefront, and total cost of ownership must be considered when adopting new technology.

This comparative white paper will investigate using Unified Communications as a Service (UCaaS) as a communications solution, factors to be considered when calculating the TCO, and how to compare it with a premise-based system.

WHAT IS UNIFIED COMMUNICATIONS?

Unified Communication (UC) Systems have replaced legacy key and PBX systems as the default for phone or voice communication systems being deployed across organizations of all sizes, from SMB to large enterprise.

> "UC products (equipment, software, and services) are defined as "those that facilitate the interactive use of multiple enterprise communications methods. This can include control, management, and integration of these methods. UC products integrate communications channels (media), networks and systems, as well as IT business applications and, in some cases, consumer applications and devices."

The capabilities of a UC system extend beyond standard voice communications to integrate instant messaging, presence information, mobility features, audio, web and video conferencing, desktop sharing, web collaboration, call control, and speech recognition with non real-time communication services like integrated voicemail, email, SMS, and fax.

Unified communications enables individuals to receive the same communications on a different medium than the one they were sent with. For example, UC allows a user to access their voicemail messages via email or SMS. In addition, if presence information indicates the sender is online and accepting calls, the user can respond immediately using text, or perhaps a video call. A non real-time response can also be accessed via a variety of media.

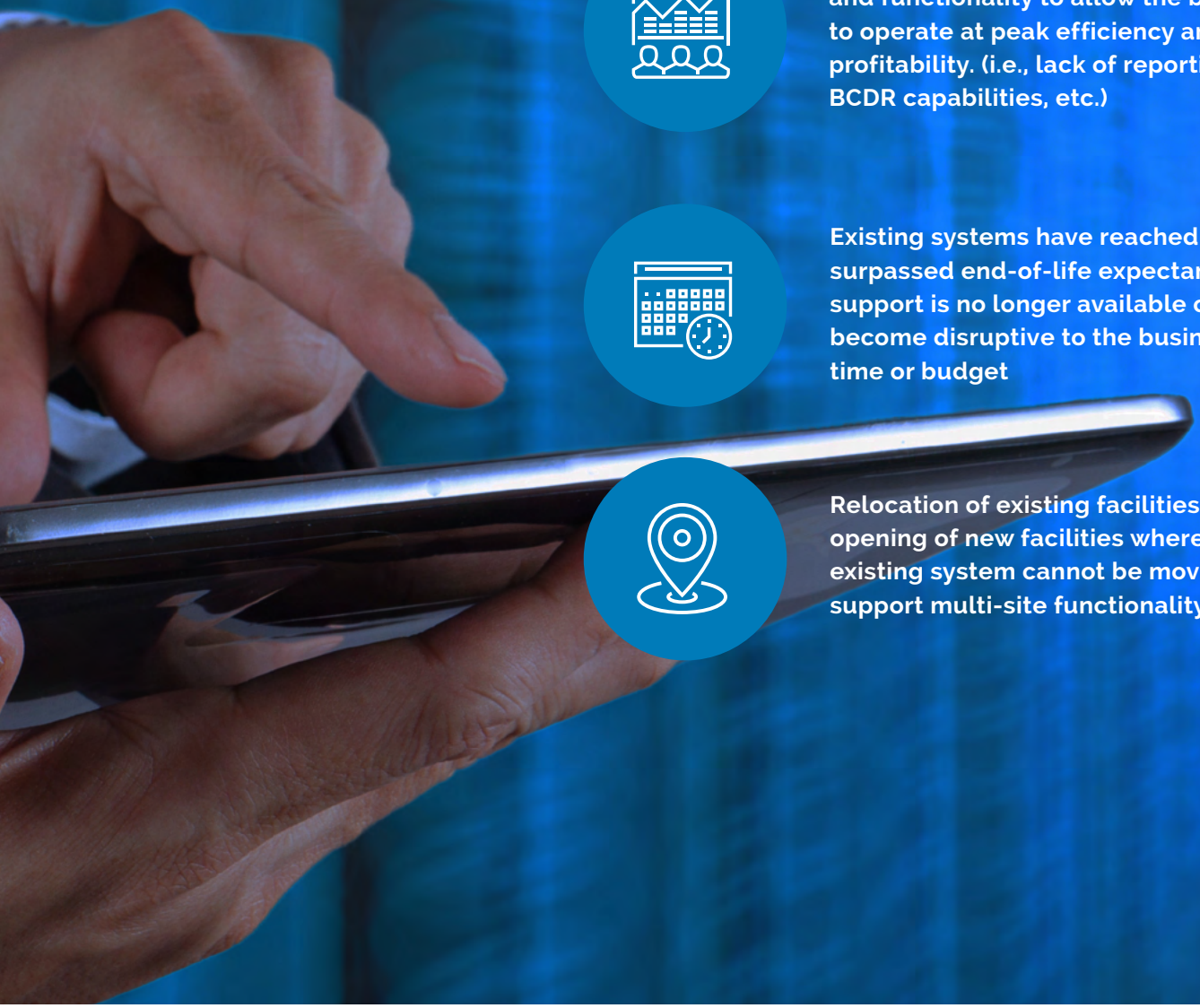
WHY UC FOR THE MODERN ENTERPRISE?

A fundamental change in the way employees choose to work may be driving more companies than ever before to unified communications solutions, but the benefits that can be gained by implementing UC are becoming apparent. A 2016 survey of IT managers suggested that increased productivity is the primary reason for UC implementation - suggesting that organizations are proactively upgrading, not simply replacing old systems as they become obsolete. Making the strategic decision to replace disparate communications systems with UC can:

- **Increase the ROI of communications technology**
- **Enhance workplace collaboration (and therefore, productivity)**
- **Empower a mobile workforce**
- **Improve organizational agility**

WHEN TO DEPLOY UC

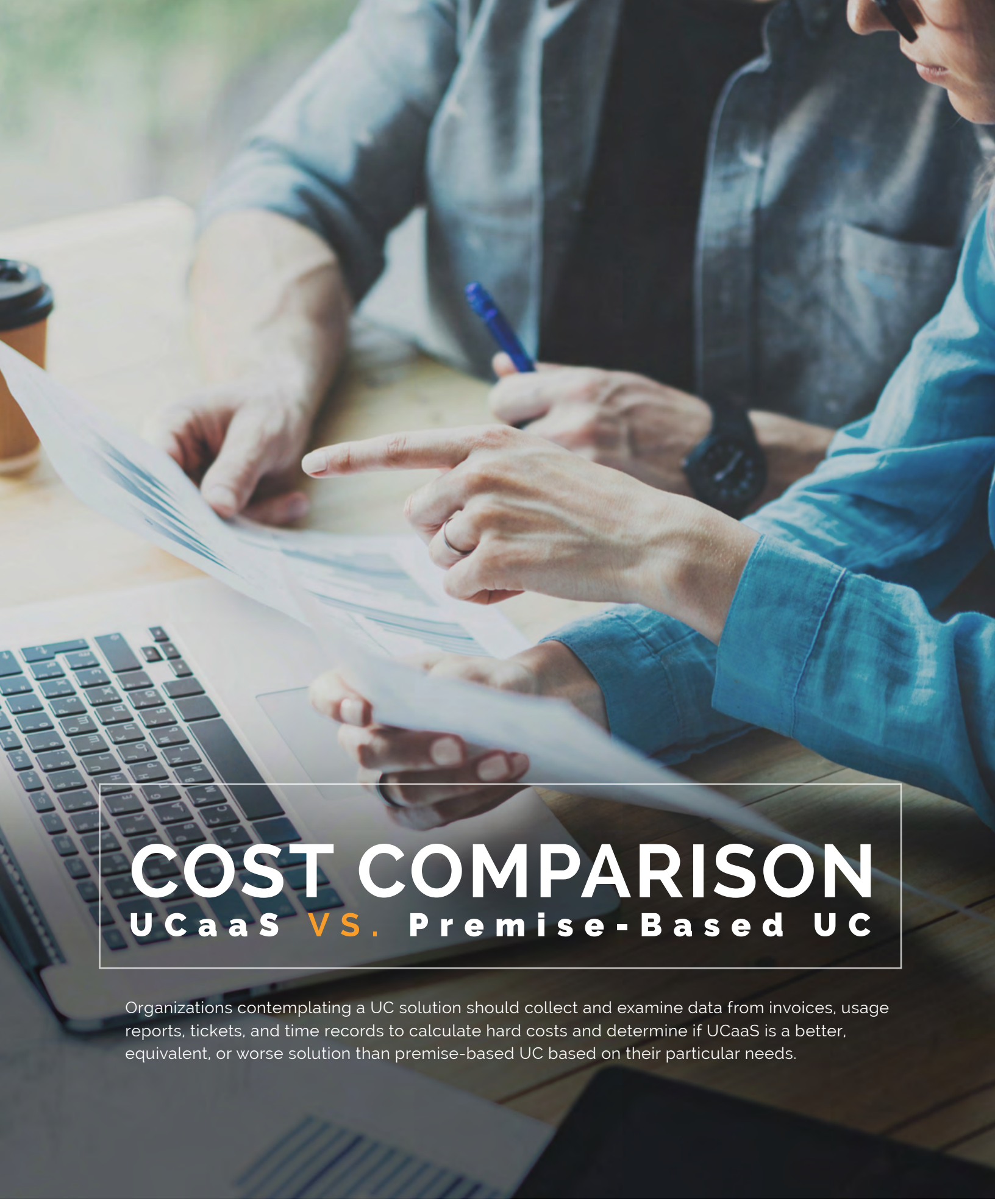
Organizations considering unified communications are presented with the choice of premise-based UC systems or UCaaS solutions. An objective and informed analysis of the total cost of ownership of each is necessary to facilitate the decision-making process. There are several scenarios that commonly prompt UC deployment:



Existing systems lack desired features and functionality to allow the business to operate at peak efficiency and profitability. (i.e., lack of reporting, BCDR capabilities, etc.)

Existing systems have reached or surpassed end-of-life expectancy and support is no longer available or has become disruptive to the business in time or budget

Relocation of existing facilities or opening of new facilities where the existing system cannot be moved or support multi-site functionality



COST COMPARISON

UCaaS VS. Premise-Based UC

Organizations contemplating a UC solution should collect and examine data from invoices, usage reports, tickets, and time records to calculate hard costs and determine if UCaaS is a better, equivalent, or worse solution than premise-based UC based on their particular needs.

One-Time Expenses:

HARDWARE AND UC APPLICATION SOFTWARE:

This includes one-time system costs normally classified as a capital expense, but does not include LAN hardware that might be required to support VoIP (i.e., ethernet switches).

UCaaS Solution: The only hardware required for a UCaaS solution is IP handsets and ATA devices for any conversions to analog endpoints. All software is included in the monthly licensing fee.

Premised-Based: Hardware costs include: servers, storage, handsets, ATA devices, software and applications, operating systems, hypervisor system, communications manager, session manager, session border controllers, workplace resources, emergency responder, contact center, and conferencing presence. Also, premised-based UC systems must be configured in an HA (high availability) architecture with geo-redundancy to provide the same BCDR capabilities as UCaaS, which can double the cost to provide a minimum of two instances for geo-diversity.

ADVANTAGE: UCaaS

INSTALLATION AND TRAINING:

This includes professional services to install and configure the system(s) and train personnel in administration and use. Training costs may vary depending on whether the instruction is web-based or on-site, and the approach or the trainer.

UCaaS Solution: Install costs will be itemized as non-recurring on the provider's proposal, either as an NRC associated with each licensed seat or as professional services. Training should be listed separately.

Premise-Based: Installation and training costs may be listed separately or as one cost in the proposal. Premise-based installation is typically more complicated (and costly) because of the HA and geo-diverse architecture that must be built and configured on site.

ADVANTAGE: UCaaS

Annual Expenses:

COST OF CAPITAL:

What ROI could be expected if the capital spent on the first two items was invested elsewhere? Crystal Technologies' UCaaS worksheet uses 3.5% as an expected annual rate of return, but this can be adjusted to suit your financial practices.

ADVANTAGE: UCaaS (because less initial capital investment is required)

DEPRECIATION:

What is the expected depreciation of hardware and equipment over the life of the capital investment? Crystal Technologies' UCaaS worksheet uses a 5-year life expectancy, based on experience indicating that a premise-based system will require substantial hardware and/or software upgrades within this time, and that a long-term contract commitment for UCaaS would expire.

ADVANTAGE: UCaaS (because less initial capital investment is required)

MAINTENANCE:

This encompasses maintenance contracts and agreements, as well as any time and materials that are paid to support and maintain UC systems.

UCaaS Solution: No maintenance contracts are required since handsets are the only hardware deployed by the provider.

Premised-Based: Annual maintenance agreements will generally include time and materials charges. It's standard for this to be provided at no cost for the first year; this is reflected in the workbook.

ADVANTAGE: UCaaS

PRODUCTION/REVENUE LOSSES DUE TO OUTAGE/MAINTENANCE

To calculate this figure, have UCaaS and premise-based UC partners provide historical data on downtime and reliability. Estimate costs for every hour of downtime (i.e., employees unable to complete tasks, orders not filled, etc.).

UCaaS Solution: Most providers will be able to substantiate 99.999%+ reliability of multi-tenant, high availability, geo-diverse services.

Premised-Based: High reliability (99.999%+) can be achieved when the system is architected to be highly available, geo-diverse and deployed in a Tier 3 SSAE16-compliant data center. Reliability will be less if this is not the case.

ADVANTAGE: Neither

Monthly Expenses:

ENVIRONMENTAL COSTS:

This covers data center, utility, and real estate expenses. Data center costs should be obtained from your data center provider, calculated for an in-house data center, or based on a third-party data center estimate.

UCaaS Solution: No environmental costs. UCaaS providers' systems are deployed in Tier 3 SSAW16-compliant data centers.

Premised-Based: Calculate costs associated with electrical power, UPS, generator, fire

ADVANTAGE: UCaaS

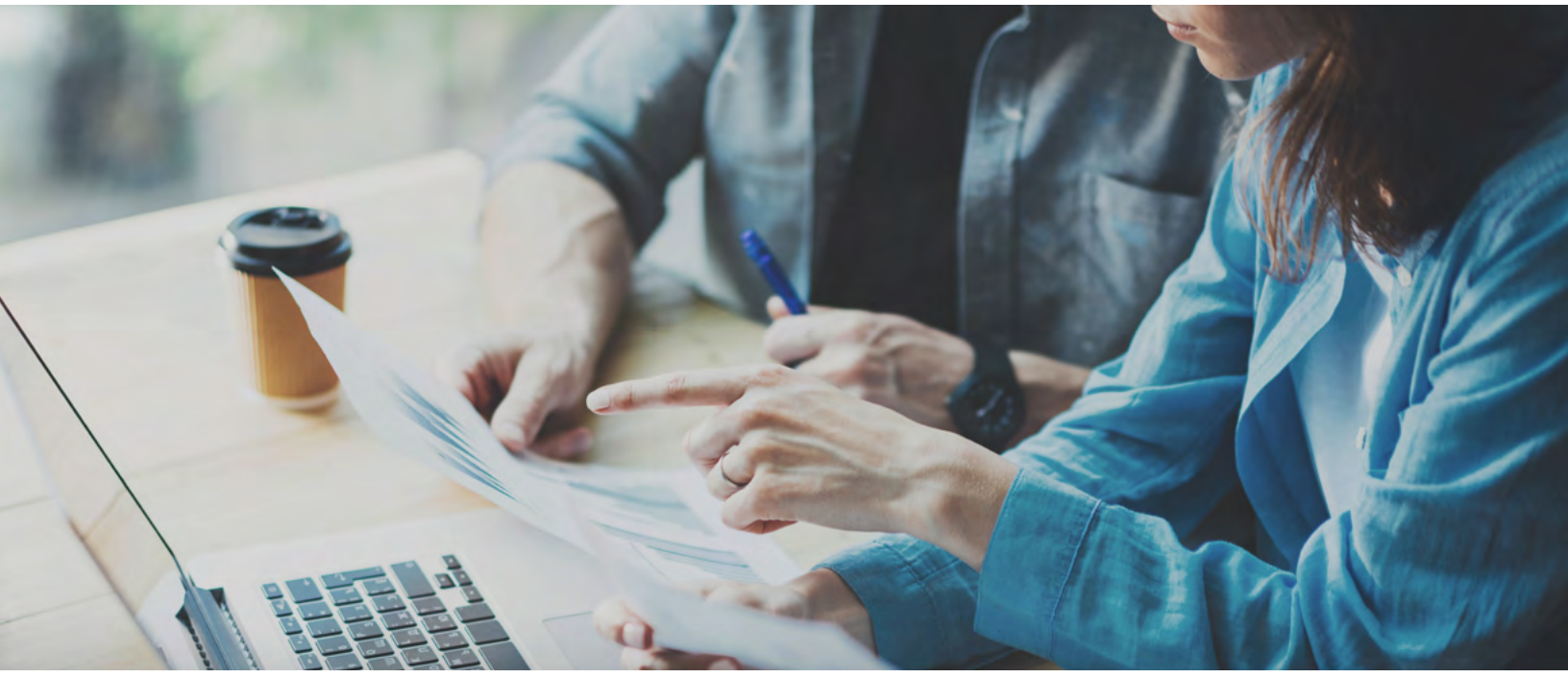
DATA NETWORK:

This covers the total cost of all data connections: internet, MPLS, VPLS, private lines, etc.

UCaaS Solution: Best practices dictate using existing private IP connectivity for connections to the UCaaS provider with existing internet connectivity as backup.

Premised-Based: Best practices involve deployment of SIP trunking over an existing IP connection from data or voice provider to both geo-diverse session border controllers.

ADVANTAGE: Neither



Monthly Expenses:

VOICE NETWORK:

This encompasses costs of all voice connections, including SIP trunking, PRIs, LD T1s, POTS, etc.

UCaaS Solution: Typically, the only costs would be analog lines left behind for alarm systems, credit card machines or modems.

Premised-Based: Costs include SIP sessions or concurrent call paths on SIP trunks, as well as analog POTS lines left behind.

ADVANTAGE: UCaaS

VOICE USAGE:

This includes the sum of all local, long-distance, and toll-free costs that are billed by the minute for usage.

UCaaS Solution: Local and long-distance should be at or close to zero, depending on whether or not analog lines are still present. UCaaS providers offer inclusion of Local and LD usage in the monthly subscription fees and will charge market rates for toll free usage.

Premised-Based: Local usage is generally included with SIP trunking, but long-distance and toll-free usage will be billed per minute. Any analog costs will be unchanged. analog POTS lines left behind.

ADVANTAGE: UCaaS

Monthly Expenses:

AUDIO, VIDEO, AND WEB CONFERENCING AND COLLABORATION:

For simplicity, this section should only contain additional third-party conferencing services that would be retained with the adoption of a UC system (i.e., Cisco WebEx).

UCaaS Solution: UCaaS provides easy to use, feature-rich conferencing solutions that can be bundled into a seat license. Third-party services are not normally required.

Premised-Based: Many premise-based UC systems can provide capable conferencing, but this adds to system complexity and costs. This results in most organizations who deploy premise-based systems retaining their third-party conferencing and collaboration solutions.

ADVANTAGE: UCaaS

UC SERVICE SUBSCRIPTIONS:

This is specific to UCaaS seat license costs. Licensing is billed as a monthly recurring subscription — the number and type of license can be scaled up or down to meet current requirements.

UCaaS Solution: UCaaS providers typically offer licensing bundles in the following formats:

- Utility Seat - no user (i.e., lobby phone)
- Basic User - messaging, presence, mobility extension (most office users)
- Mobile User - adds softphone capabilities to basic (most field employees)
- Executive User - adds audio, video, and web conferencing and collaboration to mobile
- Contact Center - licensing for groups, agents, and supervisors

Premised-Based: No monthly subscription is required.

ADVANTAGE: Premise-Based

Monthly Expenses:

HELP DESK AND IT SUPPORT:

This is an estimate of internal labor costs for maintenance and support of both users and systems.

UCaaS Solution: No internal system maintenance is required. IT will have access to a web portal for administration and MACDs, and may choose to provide users a limited access to the same portal. Repair and troubleshooting efficiencies can be gained when the system and voice service are supplied by the same provider, as opposed to having a both a PBX vendor and a voice service provider.

Premised-Based: Internal efforts to maintain and operate servers and applications are required. Coordination is required for scheduling technicians' time and parts delivery, and troubleshooting can result in accountability issues between system and voice providers.

ADVANTAGE: UCaaS

PRODUCTION EFFICIENCIES GAINED:

Estimate employee hours saved or additional revenue achievable with the deployment of each system.

ADVANTAGE: Neither

REDUCTION OF CUSTOMER ATTRITION:

Estimate change in customer attrition or churn rates achievable through the deployment of each system. (This may not apply to all business models.)

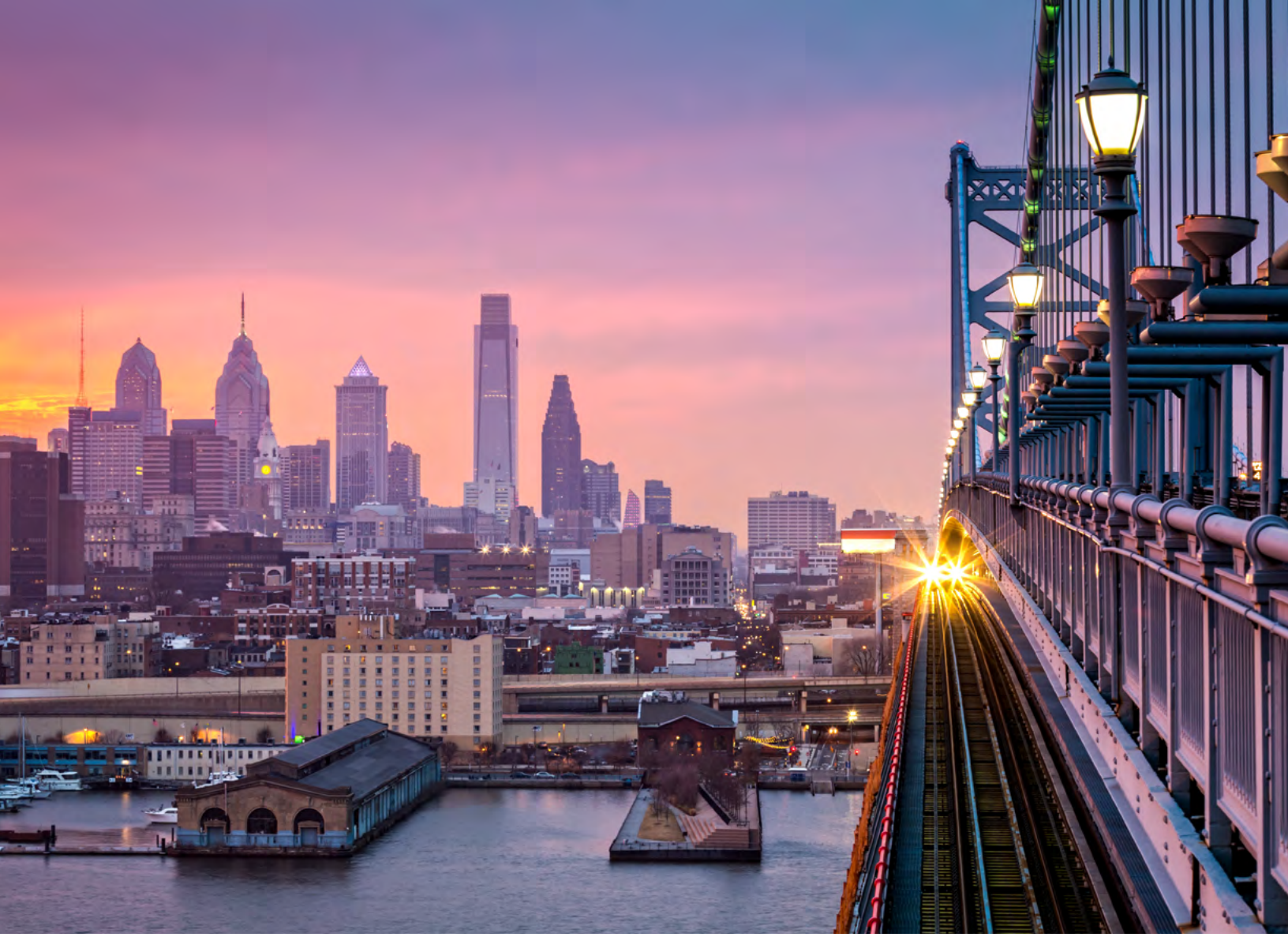
ADVANTAGE: Neither

CALCULATING THE TCO FOR UC

Gather data from each of the above criteria and enter them into a spreadsheet to calculate the total cost of ownership of a UC solution for your organization. I recommend calculating over five years, which covers:

- **The average time between major premise-based upgrade requirements**
- **The length of a long-term UCaaS contract**

Want to ensure you're maximizing the value of your UC investment? Download Crystal Technologies' free worksheet to calculate the TCO of solutions you're considering and modify it as needed to suit your company's unique needs.



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