bicom SYSTEMS

How to Start an ITSP

Stand Out with Happier Customers!

Introduction

Considerations to Starting an ITSP

Are you starting or growing an Internet Telephony Service Provider? If so, this paper will take you through all the main issues and steps involved. We draw from years of real-life experience across the industry and across the world. The issues involved with and process of setting up and running ITSPs outlined here if dealt with, will help you to become successful.

Over the past eight years, we at Bicom Systems have had the privilege of being a part of setting up many Internet Telephony Services with a wide range of Providers around the world.

Some have been blue-chip multi-nationals with 50,000+ extensions in the planning; many have seen the upgrade of existing systems, often where the burden of managing their own in-house Open Source packages was becoming overwhelming; many were simply Start-Up businesses from Grass Roots.

From these experiences we have noticed that there really is space for everyone, but still great differences in the nature of success of such ventures. This paper details some of the topics that should be considered both technical & commercial with the purpose of promoting the undertaking of such ventures.

This paper will present three main ideas to you:

- The Approach discusses who your customers are and how to get them.
- The Delivery explains the core systems as well as provisioning and troubleshooting.
- Stay In & Get Ahead deals with where things can go wrong and how to keep ahead by learning from experience and planning for the future.

The following pages are filled with the experiences of an already established company; continue reading to benefit from that knowledge and prepare yourself for this new venture.

Your market

This must be the starting point to any such venture. It is also, in many ways, both the most varied consideration and the most predetermined by circumstance.

These topics are listed in the order in which you might consider them:

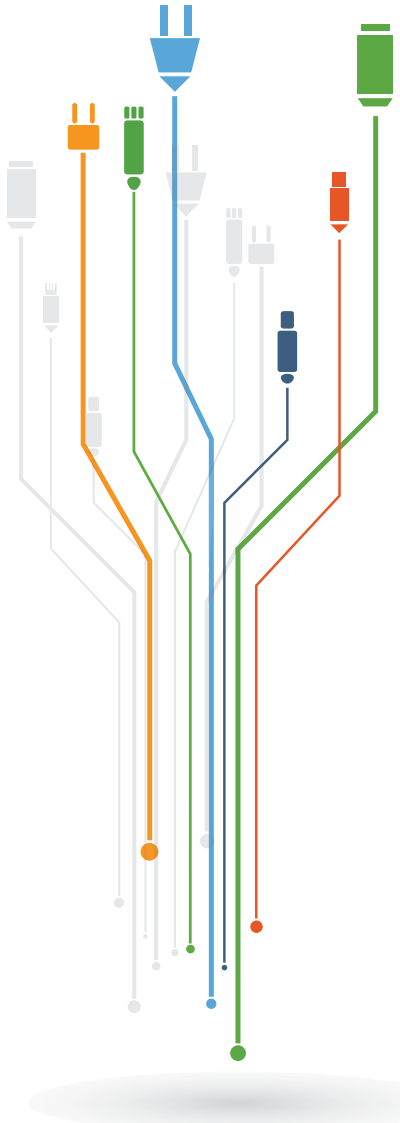
Geography & Transport Market

Many service providers cater to communities that, by way of remoteness, are served with few, if any, modern communications infrastructures. Typical examples are Islands or Remote Inland areas. Often this means the service provider's primary logistical feat is to provide Transport Connectivity, and voice is a value-added service.

The transport may be by wimax or even satellite, and increasingly 4G. While this has the advantage of near monopoly, it does increase capital costs.

In large metropolitan areas, transport is often a perfectly competitive market where margins are minimal and supplied by large and highly efficient distributors. There are, however, many reseller options with rebranding possibilities. As DSL & Cable are replaced with Fiber to the Home, voice quality is becoming guaranteed.

There are typically more businesses in cities, so customers are willing to pay premiums for service; quite simply, a larger target to aim at and hit.



The Approach

Considerations to Starting an ITSP

Residential or Business

In developed markets, Residential is often already catered to by a few large incumbents and without considerable scale and extras such as Triple Play or some technological gimmick; it is harder to distinguish oneself. Sometimes, though, niche possibilities exist, such as expatriate communities.

The Business market is often simpler to make a distinction in. This is in great part due to the more complex and consultative engagement. The customer needs to understand the technologies and will invariably need assistance with items such as IVRs.

As communications unify, CRMs such as Sugar & Salesforce become ever more prolific, mobile communications merge with the office system, and the need to have consultation grows.

Often this also involves networking and the skills that necessitates, but more importantly the time and local presence required to support this operation.

In this myriad of possibilities there is more opportunity to up-sell after the first offer to attract interest. This said, residential customers are increasingly looking for business features – we all would like to record a call from time to time but mainstream providers may be reluctant to enter into such complexity.

Size of Market

If the market is a remote community then the issue is whether it is large enough to cover all costs or government subsidies are needed. In metropolises, more significant is just how much of the cake can be accessed.

Competition

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Government

From experience, government has proven to be the hardest and the easiest of institutions to deal with. With restricting budgets, they have the greatest need to take advantage of the cost opportunities that technology provides.

This does create pressure to move away from Traditional Vendors and consider elsewhere; however, the decision can take years. We have also found that sheer weight of examples and references of what the systems can do makes for a huge persuasion if you can back up your promise to perform with suitable references.

If your business is already of a suitable size, references may not be an issue. Alternatively, the manufacturer supporting you may be able to offer their references instead.

Irrespective of one's size, the market is large and varied. There is space for many entrants in many forms.

Distribution Channels or Direct Sales

For many established providers of Internet connectivity, this question may appear already answered. The connectivity transport they have been providing has fortuned them with a large existing customer base. This can be a false paradise. New market entrants with more value-added offers will encourage cost savings as new transport technologies become available. Unless such established providers take a strategy to expand their value-add offering, they stand to lose their existing market.

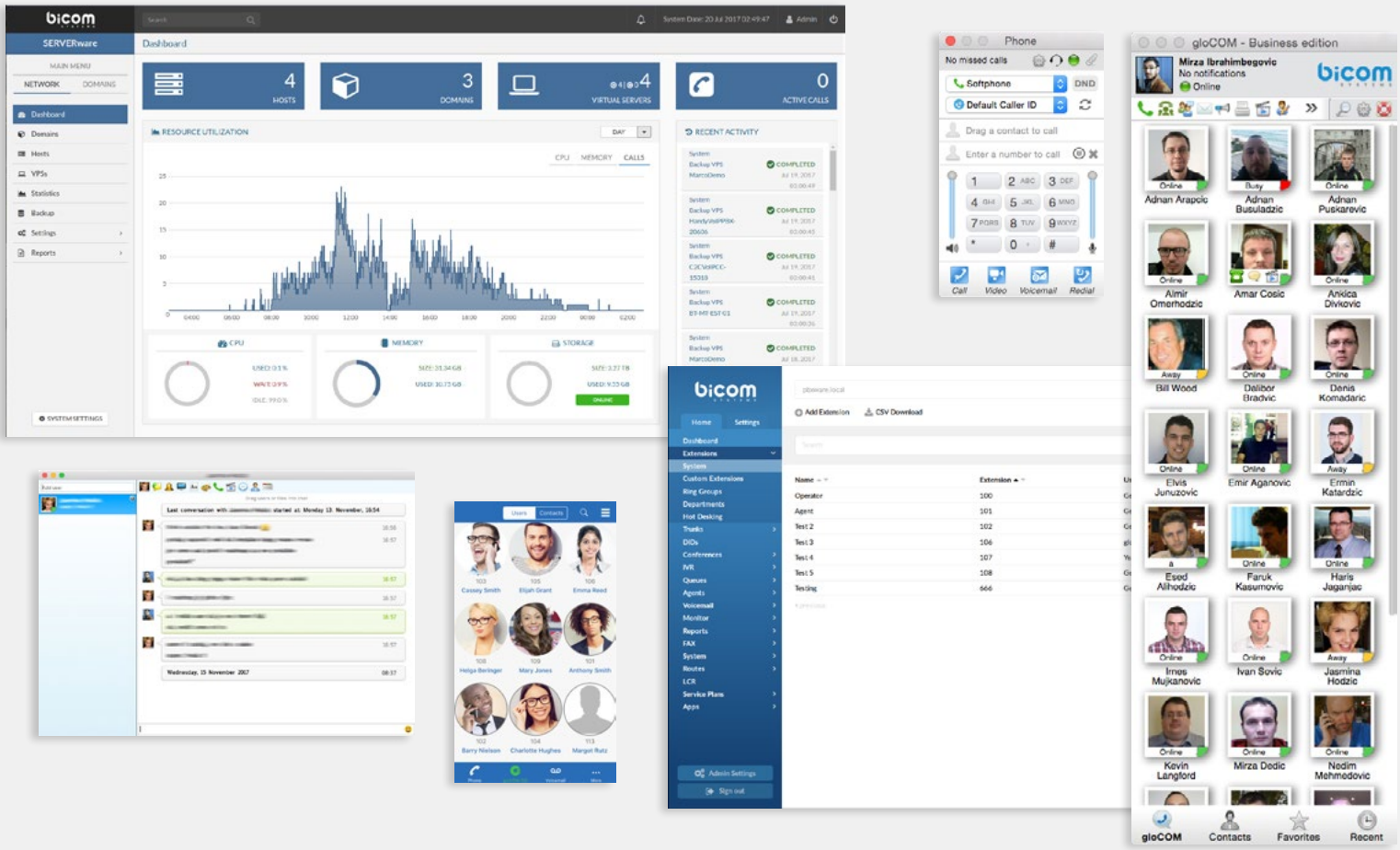
Existing Dealers – there are often providers of traditional phone systems that do not have the networking experience to deliver IP systems nor wish to manage the core infrastructure needed to support such an operation. Likewise, there are many providers of IT Services for whom voice is requested by customers but would be an unnecessary distraction from their core offering. Even if you are starting from a small base you may find yourself able to punch above your weight.

Direct Selling by phone or physical attendance can work if promoting both cost-savings and value-add effectively. There are many middle value customers of 20+ extensions, or even 5-10 extensions, that make such a venture economic. Less than this is difficult unless you are small enough that you can subsidize labor time or large enough to be perfected in your operations

With a little experience it becomes easier to know in advance which channels are more or less likely to work. We now turn our attention to what to take to the market.

The Approach

Considerations to Starting an ITSP



Product Features & Functions

The mix of Market and Operations & Provisioning will greatly influence the choices made for Product Features & Functions.

If the purpose is to provide custom set-ups, as can be common with larger business customers, then you will need a full range of features and functions at disposal for use according to circumstance.

As processes automate, the more features you have, the sooner you will not be able to support customers in their usage. Concentration on a few cool features that generate sales may be more appropriate.

Call Recording should be provided at an extra cost or else correctly limited as it can be an expensive drain on CPU and, in turn, server capacity.

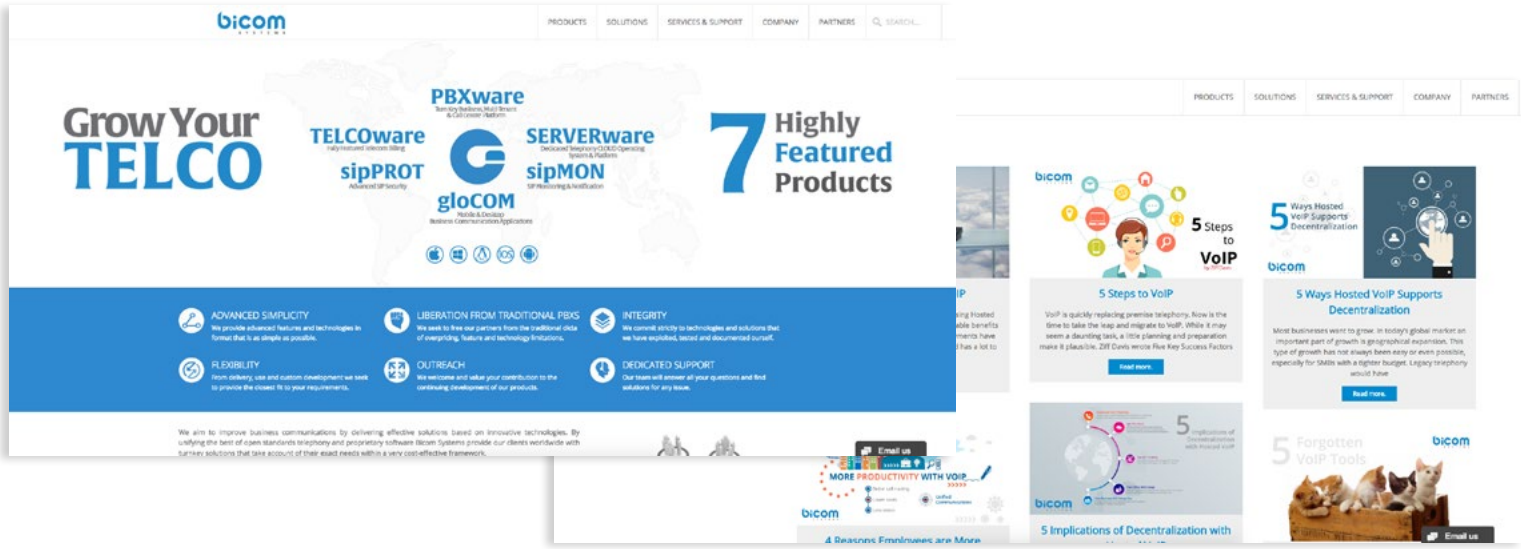
In the business market, one needs to determine just how advanced customers' expectations are with the latest technology. Basic unified communications including online chat, fax and voicemail to email may be a minimum, but also consider mobile/fixed merging; integration with desktop applications like Microsoft's Outlook & Exchange to perform those little tweaks that make the difference, such as diary notes putting the phone to 'do not disturb'.

The possibilities are so varied and unpredictable that, based on our experience, offering custom development can make the difference in securing the close of business. This does, however, require having a reasonable variation of developers from which to draw on.

Marketing Documentation

In each case this needs to be unique and many of the above factors will lead into how this is brought together and made appealing to the target market.

These elements, brought together, should furnish an ITSP start-up with plenty with which to present and gain interest while having the security of being flexible enough to deal with the unknowns. We will now look at the core infrastructure needed in place to deliver service effectively and efficiently.



Infrastructure and CPE

Core Infrastructure: varies with the size of operation. However, one server with two quad cores and 4GB RAM can typically support 400 concurrent calls without call recording. This is probably 2000+ business extensions or 5000+ residential extensions, which is more than enough to allow a startup business to begin operating or a pilot study for a large national rollout.

This should ideally be made redundant either with hardware redundancy so that if one hardware device fails another can replace it, or a reliable cloud structure. To be effective, the redundancy must deal with 'two brains' – what happens if the original server starts again? See more on the clouds below.

Much of the content, however, is linked to the switch and from our experience, providing the source of the base content on features and functions to partners has saved enormous resource at the beginning of a new business venture even for large OEM customers.

Latterly one may wish to consider 'dual location redundancy' to secure against acts of terror & natural disaster. However, this does cause costs to rise considerably.

In all cases – a firewall is a must. Password-protected http, root, and SIP endpoints should be using the highest security; without this, hacking is inevitable. Good advice should be sought on these matters.

Infrastructure and CPE

The SWITCH: will of course be the fulcrum of the entire business. It is the single most important purchase decision you will make and can be a considerable financial commitment. More importantly still, once made, it is not practical to move customers to another platform should the decision have proven inadequate.

Some truths of guidance are:

- No matter what you think your customers need, they always need more and want to do things in another way. You cannot have too many features to support this. Even if the principal market is not Call Centers, some customers will require the highly detailed statistics and supervisor tools that this specialist market demands.
- Some customers will want onsite deployments and to be able to deploy the same software as used in the hosted platform to minimize training issues.
- Any platform needs to be scalable but have options to get you started at a low cost base.
- Free systems do work but require highly competent engineers to deal with the security risks which are inevitably public knowledge. We have seen many a trunk hacked. Having taken a very long time to be set in a stable and secure environment, the update procedures may not be in sync with one's own business demands. These systems also lack the add-ons that are becoming market standard such as desktop communicators, receptionist tools, and the like.
- Auto-provisioning of handsets is an absolute requirement.
- Very soon an integrated (multi-tenant) system is required. To support many small systems in different places becomes overwhelming.
- Multiple levels of privilege are needed to ensure that Super Admin, Tenant Admin, and Supervisors within a company may all access the facilities relevant.
- The SWITCH should be open enough to permit integrations with Third Party CRMs.
- Billing ideally should be integrated or have some manner by which live accounts can be measured should they exceed credit limits.
- Consider the years of experience a provider has in their market.
- Consider the breadth of development skills a provider has to meet, ever-changing demands at the desktop.

In our own experience at Bicom Systems, it took years and constantly being available to requests of end users to bring our systems to a state of reliability and feature richness that is now in place.

Infrastructure and CPE

Customer Premise Equipment (CPE): offers a great variety of options to how they register. IP handsets still secure the best quality. This is because much of the work needed to maintain call quality is performed on the hardware inside the phones that a PC with a softphone is emulating on its CPU.

Softphones with PCs can be more than acceptable but, as always, if data is used on the same local network then QoS is critical. Any install of more than one or two users will soon degrade, as a large file is transferred without effective QoS. Many QoS simply do not perform and research should be done to be sure that the one selected does work.

To support the network in general, a reliable router is needed. Even some well known brand names with strong reputations for routing data have proven insufficient.

The delivery of many handsets is best arranged with the manufacturer to ensure that the IP address and authentication is already programmed before shipment.

It must be said we have learned more about what does and does not work through the many errors rather than the few successes. Be sure to get that good advice.

DataCenter Location

If using one's own equipment, the center should ideally be accessible.

Cloud Technology: The seduction of cloud technology is obvious enough: Relatively low cost, as much room to expand into as needed, and surety of service. However, with providers of cloud services under stiff price competition, any ITSP needs to assure them that the provider guarantees adequate CPU and bandwidth. If it is shared, there will be disruptions to quality and for voice that is just not acceptable.

Bandwidth costs for voice are usually negligible against the minutes charged. Still, be sure to ask.

Inventory & Wholesale Provision

Inventory, for the most part, is unlikely to be too great a consideration. Even the CPE can usually be obtained 'just-in-time'. More than 200 handsets will probably need a lead-time. If, though, your market is typically 4 users or fewer, you will probably be configuring the handsets at base before delivery to the customer, so having a few in stock will be helpful.

Wholesale providers, when starting out, are probably best kept to a minimum for reasons explained below in managing routes. One domestic supplier and a secondary provider for failover and one international provider will probably suffice. As traffic flows mount, further specialists to specific routes can be sought.

DIDs, however, do need to be considered in terms of inventory. If you have a license agreement with a national regulator, these may in effect not cost. However, if you are renting these from a wholesaler they will fast become expensive if not used. An API to the provider is ideal so as to permit a customer to choose from different area codes knowing that the number chosen is the one delivered.

The Delivery

Considerations to Starting an ITSP

Web Site Ordering, Provisioning & Operations

In a very early start-up operation, CDRs can be rated manually and invoices produced manually. Soon enough though, from our own experience in supporting partners even after four-five customers, the screams for automation start to be heard. Just to know that the correct invoice will get out each month permits concentration on the real matter at hand of bringing in new business. Ideally this is linked to a payment gateway and the revenue can be seen coming in each month too.

Automation, however, should not stop here. Following sign up and selection of the subscription, the customer should easily be able to select add-ons. These could be hard items such as routers or handsets. Services available such as IVRs, Conferences would need to then be linked to any switch to open them up as well as to add the monthly charge to the subscription. DIDs, however, are probably the most complicated item. Ideally these are supplied from a registrant in inventory but often in larger markets they are needed from the wholesaler through API to ensure that what the customer selects they receive. This, though, is just the beginning of the automation needed and the DID should be set up on the switch so that traffic can pass.

More complicated still is if porting is required. Not only is a template needed to receive the relevant porting details / proof of request, but those then need to be sent to the right place. Probably, though, the area that we found took the greatest concentration was planning ahead each scenario that customers may want to act in and making sure that provisioning was flexible enough for this purpose.

For larger corporations, there is often an existing provisioning platform in place. For start-ups, the options are much fewer.

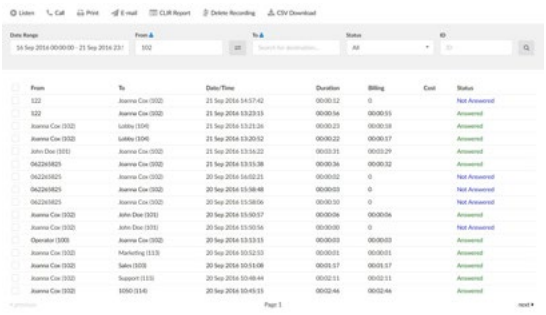
The Delivery

Considerations to Starting an ITSP

Securing the Final Mile

Fiber is becoming increasingly common. Often though, service providers are using their own networks of wireless technologies or depending upon DSL that can vary greatly. If there are reasons for doubt, it is worth instigating tests in advance.

Managing Routes and Rates



Until this has been done, it is yet to be believed. The number of possible destinations on which an error could be made and fraud be carried out are enough to confuse anyone not dedicated to this task. To assist, we created a Rate Card Manager that makes it simple to load up rates from different providers and set rules by which the relevant provider will be selected.

For larger providers it quickly becomes a necessity to have one dedicated staff. Smaller providers often prefer to stick with one trunk provider and simply add margin. It can be worth asking to outsource this task.

Many suppliers of international routes operate in a manner of laisser-être. No protection is made for 'premium' or 'satellite routes'. No protection is made for a final end user exposing himself or herself through a poor password to a hack and sudden explosion of call spending. Early on we put in protections of this kind for our own Telco Services.

For any consistent business, quality rates will matter. It is, however, with the DIDs that the greatest care should be taken. The financial stability and longevity of the company must be considered. A problem here and there is no easy answer. To port many numbers is not easy.

These items dealt with you should now have the basis for supporting and delivering to your customers.

Now to really test how ready you are ...

Where it can go wrong

- SWITCH failure is probably the item that will see your entire business collapse the quickest. As surely as switches run uninterrupted, hardware can cause databases to corrupt, denial of service attacks to push the engine over. Timely reaction is critical. This is so often not just about support, but engineering skills being available.

- Close behind for sheer dramatic influence is Failed Security. Either through direct attack to the server or poor passwords at an end user level which will inevitably be breached. Daily or Monthly Limits on call spend are the best manner by which to reduce the effect of end user devices being compromised. Passwords of high security are a must.

- As traffic builds you will be found and probed by attackers trying to gain access.

- You will soon see social networks being of such poor quality to cause disruption to quality. This can become an impossible time shoot and often the only manner is to have known or seen the problem before. One example that comes to mind is a customer who complained that there was a permanent buzzing sound on the calls. None of the evidence from call recordings supported the claim. There was no such buzzing on the call. In the end this was traced to the particular handset being susceptible to static from the LAN and the handset removed from supported list.

- Upstream Provider not routing or providing poor quality will soon see the demise of a business.

- How do I? Each customer needs that little extra. From experience this is where most of our support time is expended rather than it working. The examples never stop. To name a few:

    - How to construct an IVR so that after the callee is identified, his/her exam results are played back by sound file

    - How to allow access

    - If an extension is not available, how to forward the call to a cell phone but to ensure the callee has announced who they are so that the recipient on the cell phone knows who is calling before accepting

... and this list is not exhaustive.

Stay in & Get Ahead

Considerations to Starting an ITSP

Reflection & Feedback

The time soon comes to look back at why customers have bought and update marketing and why they have not bought – which is often about updating product features.

Such ideas are best bounced off others who have broader experience to make suggestion as matters move forward.

Manufacturers of systems should be prepared to join in a conference call to close those important sales. Those few big references make all the difference going forward.

Future Proofing

Either by going it alone, or by choosing a partner, you need to be sure there are clear plans to deal with some of the coming great changes:

- Integration with other software such as Microsoft Lync
- Mobile – Fixed Integration that a call an be passed seamlessly from mobile to fixed line
- Integration with third-party CRMs

Looking forward

After quite so much detail on where pitfalls are, I do wish to finish expressing my optimism to the growing of ITSPs. For many parts of the world, the final mile of transport is opening up many possibilities.

The offers from the existing incumbents all have weaknesses, and provided your technology R&D strategy will keep you ahead of the curve, the world is there to grab, provided one identifies strengths and has ways to cover research to the future oneself or through partners.

We wish you all the best with your own ventures and reach out to anyone who is seeking a partner to support them in achieving their own presence.

Please feel free to peruse our website www.bicomsystems.com

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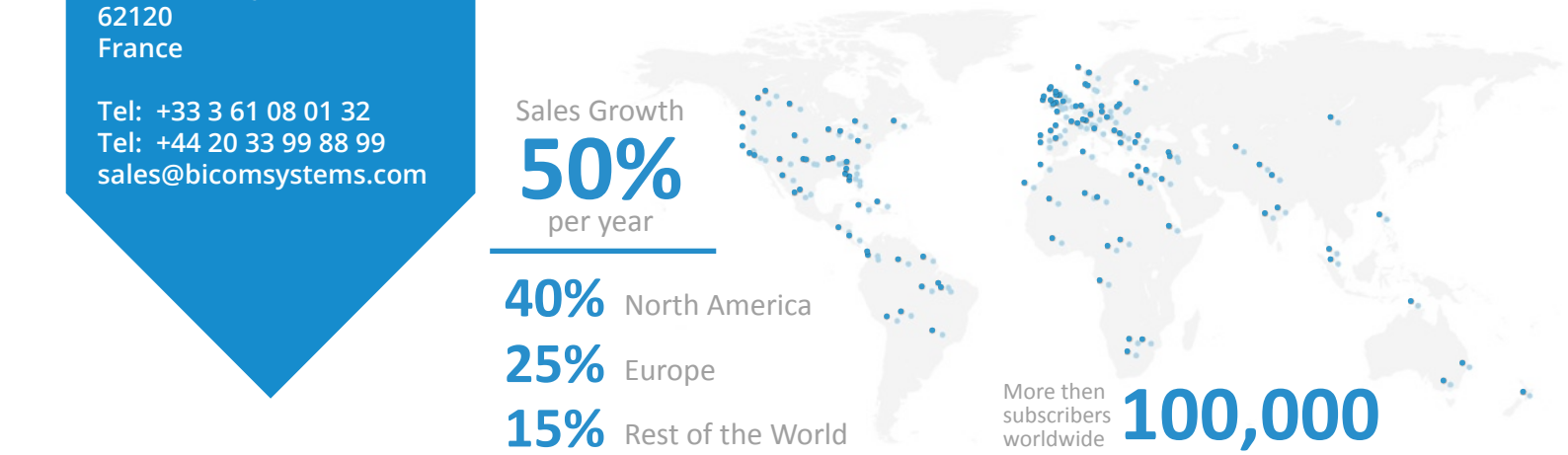
Bicom Systems
was the first company to deliver Open Source Communications Software as Professional Turnkey Solution.

By combining the best of Asterisk open source telephony and its own proprietary software, Bicom Systems provides clients with turnkey solutions that take account of their exact needs within a very cost-effective framework.

Bicom Systems seeks to provide the unique combination of quality and value. This mix includes royalty-free software, vibrant open source communities, custom development backed up by accountable, professional support services.

Sales Growth
50%
per year

40% North America
25% Europe
15% Rest of the World



More then subscribers worldwide **100,000**

Financials

The company is private, driven by the founders, profitable and debt free.

Global Reach

We can and have deployed on every continent. Our products are used daily by one-person businesses, SMBs, blue chip corporations, governments and service providers.

Strategy

To focus on the production of quality systems while building solid lasting relationships with local partners to achieve the furthest fastest reach for our products.