Mobile Virtual Network Operators
Critical Success Factors
coleagoconsulting
Business Challenges and Objectives

There are many challenges in launching a successful MVNO

To launch a successful MVNO it is important to ensure that you have in place all the Critical Success Factors

The challenges of launching an MVNO

The combination of an increasingly favourable regulatory environment and market maturity has led to a significant growth in MVNOs. Despite the improving environment and the more favourable wholesale terms being offered by networks the list of failed MVNOs continues to grow, demonstrating that creating a viable MVNO remains challenging.

Of the recently launched MVNOs it is too early to say whether they will ultimately create value for their shareholders. However, reviewing the accounts of Virgin Mobile reveals that where an MVNO can leverage its brand, customer base and distribution assets effectively the resulting returns on capital employed are impressive – in the case of Virgin outperforming their host networks by a factor of 10!

The main challenge for an MVNO is no different to any other business and that is to have a good “story”, some form of competitive advantage, a source of differentiation or a USP (unique selling point). This is most effectively achieved when the business can leverage existing assets such as existing customers, brand, distribution, content or infrastructure.

A good business story, whilst essential, is not sufficient to ensure success. The greatest challenge is securing a network deal at a wholesale rate which allows the MVNO to create value for shareholders. The chances of negotiating a good deal are significantly enhanced if the underlying business proposition is strong and is presented in a clear, consistent and compelling business plan which is supported by a flexible and detailed Excel based business model.

The chances of successfully securing a network deal are increased if the target host network is selected with care and the MVNO’s network architecture is carefully matched to the business needs.

Even with a strong business case and a favourable wholesale deal the business plan is still nothing more than just a plan. To create value for investors the plan must be implemented and this requires the careful selection of equipment vendors and world class programme management to ensure successful execution. Once launched the only remaining challenge is to keep pace with the constant change of the telecoms sector!

Critical Success Factors for launching a successful MVNO

- Have a good business “story”
- Select the appropriate MVNO network model
- Develop a robust business plan and financial model
- Select the right network partner
- Negotiate the optimum wholesale agreement
- Select the right equipment vendor and negotiate good terms
- Put in place world class programme management
- Improve performance on a continuous basis
Leverage is essential for value creation

An MVNO is no different to any other business and must have a source of (sustainable) competitive advantage if it is to create value for investors. Competitive advantage is achieved by successful MVNOs through effectively leveraging their existing assets to generate customer growth with low customer acquisition costs. It is this leverage that provides the basis for a good business “story.” MVNOs typically seek to leverage the following assets:

- Existing customers – it is easier to sell a new service to existing customers than it is to win entirely new customers (e.g. Tesco)
- Brand – to be successful the leveraged brand must drive the purchase of mobile telephony (e.g. Virgin)
- Distribution – existing channels to market will help reduce the cost of customer acquisition (e.g. Virgin, Fresh Mobile – CPW)
- Content – for some, mobile provides simply another media for the distribution of existing content (e.g. using the mobile to deliver advertising – Blyk, music downloads Radio-Formula, France)
- Convergence – bundling of multiple communication services is increasingly common and has been shown to increases customer loyalty (e.g. Tele2, BT leveraging customers and fixed assets)

Successful MVNOs are those that are able to leverage existing assets in order to create additional shareholder value.
## Typical MVNO strategies

We identify 6 broad categories of MVNO strategy, each leveraging different assets and selecting a different position in the market place.

<table>
<thead>
<tr>
<th>Category</th>
<th>Strategy</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad groupings</td>
<td>Typical strategy adopted by the MVNO</td>
<td>Current and historic examples</td>
</tr>
</tbody>
</table>
| Existing fixed line operator    | Some fixed line operators previously owned mobile assets and then disposed of them (e.g. British Telecom) or never previously owned mobile networks (e.g. Virgin Media). However, declines in traditional fixed line revenues as well as an increasing move towards convergence (e.g. triple and quadruple play) are seeing some fixed line operators deploying MVNOs to target the mobile market. | British Telecom (UK)  
Virgin Media (UK)                                                                 |
| Existing mobile operators       | Due to the large fixed costs of mobile operators and the resulting impact of economies of scale (a small change in revenues translates into a disproportionate change in profits) mobile operators who lack critical mass in terms of market share have sought to increase network utilisation by hosting MVNOs who bring additional customers at lower costs of acquisition. | T-Mobile (Europe)  
E-Plus (Germany)                                                                                                                                 |
| Low cost MVNO                   | A number of MVNOs have sought to compete on the basis of price by exploiting the low fixed cost base of a thin MVNO network architecture. The business model is susceptible to price competition however as ironically the marginal cost of carrying another minute of traffic for an MVNO is considerably higher than that of a MNO. Some low-cost, no-frill MVNOs have failed due to price competition and this highlights the importance of securing an appropriate network deal and stress testing the business case in an appropriate Excel model. | Easy Mobile (UK – failed)  
Tesco Mobile (UK)  
Asda Mobile (UK)                                                                 |
| Branded MVNO                    | Virgin mobile is probably the most often cited example of a successful branded MVNO. A branded MVNO seeks to leverage an existing brand and other assets to an existing customer base. Another example is ESPN a sports focused MVNO which was unsuccessful. The success and failure of these two examples highlights the importance of ensuring that the brand and proposition is aligned with customers’ propensity to select a particular mobile provider. | Virgin (UK, USA and Canada)  
ESPN (US - failed)  
Tesco Mobile (UK)                                                                 |
| Niche MVNO                      | In contrast to branded MVNOs which target a broader market a niche MVNO focuses on a more narrow customer segment with which its brand or content has an affinity. Whilst all MVNOs must concentrate on ensuring a low cost base this is critically important for the niche MVNO who typically will have a smaller customer base with which to cover its fixed costs. Ethnic niche MVNOs are increasingly common examples of a niche MVNO strategy. | GlobalCell (UK)  
Lebara (Europe)  
Lyca Mobile (UK)                                                                 |
| Disruptive MVNO                 | In contrast to the typical business models deployed by most branded and niche MVNOs some have adopted more disruptive business models. Advertising supported free mobile services are offered by Blyk. A narrow focus is required to support the advertising based model. | Blyk (UK)                                                                  |
A key strategic decision is which elements of the network the MVNO to deploy.

**Business Challenges and Objectives**

**Select the appropriate MVNO network model**

The defining characteristic of a Mobile Virtual Network Operator (MVNO) or the increasing number of Mobile Virtual Network Enablers (MVNEs) is that they do not own any spectrum or radio access infrastructure. MVNO infrastructure designs can vary dramatically from "Fat" MVNOs which own many elements of the core network, such as their own switches, through to "Thin" MVNOs and Service Providers and Enhanced Service Providers which may not even own their own customers' SIMs.

The greater the investment in core network assets the greater the flexibility of the MVNO in terms of tariffs and services but this must be traded-off against the increased capital expenditure and greater critical mass of customers required to deliver a viable return on the investment. Many MVNOs being with a "thin" architecture but the need to differentiate in terms of services often sees a shift towards "fat".
### Business Challenges and Objectives

#### Control levels of different MVNO architectures

<table>
<thead>
<tr>
<th>Control</th>
<th>MNO</th>
<th>“Fat” MVNO</th>
<th>“Thin” MVNO</th>
<th>Service Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branding</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Co-branding alongside the network provider</td>
</tr>
<tr>
<td>Pricing</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Resells the retail tariffs of the host network</td>
</tr>
<tr>
<td>SIM card</td>
<td>Yes</td>
<td>Can issue own SIMs with embedded customised data and / or software</td>
<td>Can define the SIM but the host network owns it</td>
<td>No</td>
</tr>
<tr>
<td>Messaging and value added services</td>
<td>Yes</td>
<td>Can provide all messaging platforms, VAS and content</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Traffic management</td>
<td>Yes</td>
<td>Can control routing of their customers’ traffic</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Customer provisioning</td>
<td>Yes</td>
<td>Can control customer provisioning, including the supply of handsets</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Billing</td>
<td>Yes</td>
<td>Manages its own billing</td>
<td>May have its own billing system but dependent on the MNO for billing information</td>
<td>May have its own billing system but dependent on the MNO for billing information</td>
</tr>
<tr>
<td>Customer care</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Fraud and bad debt risk</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

A potential MVNO may first consider entering as a Service Provider or “thin” MVNO to test the market before investing further.
Business Challenges and Objectives

**Typical revenue models**

<table>
<thead>
<tr>
<th>Service Provider</th>
<th>Thin MVNO</th>
<th>Fat MVNO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incoming Revenue</strong></td>
<td>MNO</td>
<td>MNO</td>
</tr>
<tr>
<td><strong>Outgoing Revenue</strong></td>
<td>MNO</td>
<td>MVNO</td>
</tr>
<tr>
<td><strong>ARPU</strong></td>
<td>Costs</td>
<td>Margin</td>
</tr>
</tbody>
</table>

- The revenues from the customer for outgoing minutes generate a margin which is passed to the Service Provider
- The Service Provider may also receive commission for each new acquisition
- The revenues from inbound traffic (interconnect income) accrue to the host network or MNO
- The MVNO collects outbound traffic revenues from the customer and pays the appropriate wholesale amount to the MNO
- The revenues from inbound traffic (interconnect income) accrue to the host network or MNO
- The MVNO collects both outbound revenue from the customer and inbound revenue (interconnect) from other operators
- The MVNO then pays an agreed rate to the host network for the traffic carried over the network

Securing the optimum network deal is fundamental to the success of the business but so too is managing customer acquisition costs and minimising fixed costs.
Typical cost structures

Securing the optimum network deal is fundamental to the success of the business but so too is managing customer acquisition costs and minimising fixed costs.

Typical cost structures for MNOs and MVNOs

MNO cost base
The cost structure of an MNO is biased heavily towards fixed costs. The main fixed cost elements of the MNO are:
- Network operations and maintenance (typically 30% of all fixed costs)
- Sales (20%)
- Customer service and billing (15%)
- Marketing and communications (10-15%)
The main variable cost elements for the MNO are:
- Interconnect costs
- Customer acquisition
- Customer retention costs

MVNO cost base
The cost structure of the typical MVNO is almost completely the opposite of a facilities based network operator. The main fixed cost elements are relatively small and comprise:
- Customer care and billing
- Sales, marketing and communications
The variable cost proportions are dominated by wholesale airtime costs as well as customer acquisition. Wholesale costs can often represent 60% to 70% of a typical MVNO’s operating costs which immediately limits profit margins. It is therefore essential for the MVNO to develop a business model that minimises the cost of customer acquisition and retention as well as fixed costs in order for the business model to be commercially viable. Successful MVNOs are often those that can leverage existing distribution assets and channels to reduce these costs.

Analysis of costs
Business Challenges and Objectives

Examples of commercial performance from MVNOs – Virgin Mobile (UK)

Virgin Mobile launched in 2000 and became EBITDA positive 5 years later and is currently generating margins of approximately 20%.
Examples of commercial performance from MVNOs – Tesco Mobile (UK)

Tesco mobile also took 5 years to reach EBITDA positive. However, in order to provide a return on its asset base of £1.6m it must continue to grow the customer base.
A successful MVNO needs a good business plan

The business plan plays a number of essential roles in the planning and creation of a successful MVNO. The roles of the business plan are as follows:

- Allows the entrepreneurs, founders or sponsoring business to assess whether the creation of an MVNO will create value for the shareholders
- Supports the identification of potential target host networks and facilitates the engagement and negotiation process with potential partners
- Provides the information required to prepare an Information Memorandum to support the raising of the finance required to implement the project
- Provides the MVNO network architecture and the starting point for developing an equipment vendor Request for Proposal and supporting subsequent vendor negotiations
- Provides the blueprint for programme managing the creation and launch of the MVNO

Characteristics of a good business plan

The business plan must be compelling, credible and convincing as it must convince investors and the potential host network that your customer and traffic forecast is achievable. The more convincing the business case the stronger the negotiating position of the MVNO. A good business plan will have the following characteristics:

- Clear, logical and internally consistent
- Credible and realistic customer and usage forecasts
- Supported by market research
- Feasible within the appropriate timeframes and flexible
- Fully funded through to cash flow positive
  - Host networks will want to ensure that the MVNO will be able to fund its activities until it becomes cash flow positive
  - As the Virgin and Tesco case studies illustrate EBITDA positive may not be achieved until year 5
- Underpinned by a robust Excel business model that allows the MVNO to examine the impact of different wholesale rates
Selecting the right network partner is vital for maximising the chances of securing a wholesale deal and ensuring that the subsequent business is successful.

MNOs and their attitudes towards hosting MVNOs

The mobile industry as a whole has very little incentive to host MVNOs as why would an industry choose to facilitate additional competition?

This paradox can be explained by appreciating that each individual MNO has every incentive to offer to host an MVNO as the host MNO gains all of the wholesale revenue but bares none or only some of the pain of additional competition (especially if they choose their MVNO partners carefully to avoid cannibalising their own customer base).

Once an operator recognises that all other operators have an incentive to host MVNOs it becomes rational for that operator to host an MVNO as well. The case becomes increasingly compelling if you have unutilised capacity on your network, you operate in a mature market and the cost of customer acquisition is high.

It is therefore not surprising that in many mature markets nearly all operators are actively targeting MVNOs and the number and diversity of MVNOs have increased dramatically. The strategies of MNOs towards MVNOs differs between countries and between players within countries. The typical responses of MNOs can be summarised as follows:

- Launch or joint-venture an MVNO to target a specific customer niche where the brand of the MNO is weak (e.g. KPN, T-Mobile)
- Acquire MVNOs in the domestic market to gain access to a customer segment to which the MNO brand was not appealing
- Respond to the threat of new competition by cutting prices in the knowledge that the MVNOs are constrained in their ability to compete on price by the terms of their wholesale deal
- Avoid competition on the basis of price by competing in terms of customer service or offering value added services that MVNOs will struggle to replicate

Selecting the right network partner

A potential MVNO will ideally engage with a number of MNOs in the hope of creating competition for their wholesale business which should result in a better deal. There are a number of factor that need to be considered when selecting which networks to approach:

- What is their attitude towards MVNOs?
  - Does the MNO already host MVNOs and if not have they expressed a desire to enter the hosting market?
  - Has the MNO invested in its own network capabilities in order to support MVNO hosting?
  - What revenue and customer growth is the MNO currently delivering and do they have existing capacity on their network?

- Which customer segments does the MNO target
  - Is the MVNO targeting a different customer segment as this will alleviate the MNO’s fears about cannibalising its own customer base?
  - What is the MNO’s positioning in the market and how do they achieve that positioning through the marketing mix? Does the MVNO have a different positioning to avoid direct competition with the host network?

- What are the likely financial objectives and selection criteria that the MNO will use in selecting which MVNOs to host?

In selecting the potential network partner the MVNO should choose a host network with whom it is most likely to be able to establish a win-win agreement.
Negotiate the optimum wholesale agreement

Financial viability is determined by the wholesale rates

The negotiated wholesale rates must be able to support the creation of shareholder value, not only in the current business climate but also if market conditions, customer or traffic mix or the regulatory environment were to change.

The ability to evaluate the impact of wholesale rates on the MVNO business plan is essential for effective planning and negotiation. Any evaluation tool must be capable of examining different types of traffic and their associated wholesale rates in order to assess the impact on the financial performance of the business. A business model must include traffic forecasts and wholesale rate assumptions for the following:

- on-net
- off-net
- Fixed
- Mobile
- premium rate
- Voicemail
- inbound calls
- Roaming
- Text
- delay tolerant data
- delay intolerant data
- VAS services
- billing increments
- call set up charges
- termination charges

Critical negotiation points

The two main negotiating areas are the wholesale rates and subsequently the Telecoms Service Agreement or TSA which defines the interfaces and services provided by the host network to the MVNO. In addition an Operations Manual must also be prepared.

Any wholesale rate agreement must have protections against price cutting by the host network so the agreement should incorporate an element of retail minus pricing so that the effective wholesale rate is the lower of the agreed rate or the host’s retail rate minus x%. This ensures the host network cannot reduce their own customer facing prices below the negotiated prices with the MVNO.

Requirements for effective negotiations

The fundamental negotiation strategy of the MVNO must be to tip the balance of negotiating power in their favour by presenting such a compelling business case that the MNO is desperate to secure the whole business. When reviewing the MVNO’s business case the three main questions the MNO will ask are:

- How much traffic is the MVNO forecasting and how much wholesale revenue will I generate?
- How credible is their forecast – do I believe it?
- Are they likely to damage my own underlying business?

In order to be effective in the negotiations the MVNO must have:

- A good business story with a differentiated position that does not threaten the target customers of the target host network
- Supporting market research to demonstrate the credibility of the customer and traffic forecasts

The MVNO should also have developed the following prior to negotiating:

- A business model and extensive risk analysis that has identified the range of wholesale rates which provide a reasonable rate of return and can be used to analyse proposals during negotiations
- Estimates of target host network traffic costs
MVNOs face two critical decisions in relation to vendor selection

The choice of MVNO network architecture and host network combined with the proposed products and services in the Business Plan will determine which core network functions will be undertaken by the MVNO. These functions will in turn determine which core network systems and services are required. The MVNO then faces two critical decisions:

- Whether to outsource or to build the capabilities in-house?
- In the case of outsourcing whether to work with a single MVNE or to work with multiple best-of-breed suppliers?

Decision criteria

In determining how best to answer the questions the MVNO must address and weigh up a number of key issues: These issues are:

- The time taken to achieve commercial launch
- The degree of flexibility over future products and services
- The future long term potential return versus the operational and financial risk
  - Investing in its own core network assets has the potential to deliver greater long term returns on investment if it achieves its target customer growth but if it fails to deliver customer targets the financial losses are considerably greater
Select the right vendor strategy

Choosing between outsourcing versus building in-house represents a trade-off between risk, flexibility and return

**Outsourcing**
Outsourcing offers the quickest and least risky route to market (from 3 months) and the lowest levels of capital expenditure and therefore invested capital. Capital expenditure is substituted by increased operational costs to the outsource company which scale up with growth in the customer base and usage. Outsourcing reduces cash outflows in the short term and shortens the time to cash flow positive. However, the longer term margins are lower and so is the potential long term return on investment. Outsourcing also typically results in less flexibility over the capabilities of the business and propositions it can offer.

**In-house**
Developing an in-house solution requires more time (6-12 months) before commercial service launch and greater investment as the time to cash flow positive and payback is longer. The higher levels of investment increase significantly the operational and financial risk of the business. Furthermore, a poorly designed infrastructure or poor implementation could damage the business’s ability to operate effectively. The right design for network and systems, the right choice of suppliers, rigorous implementation, integration and testing are all critical. Getting any one of these wrong can result in significant time and budget overruns, poor service to customers and greater expense to put things right.

Developing core network capabilities in-house however, offers greater flexibility over the development of innovative products and services and higher potential returns on investment in the long run provided the target number of customers are acquired.

<table>
<thead>
<tr>
<th>Outsourcing versus In-house trade offs</th>
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<tbody>
<tr>
<td>Low</td>
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<tr>
<td>Quick</td>
</tr>
<tr>
<td>High</td>
</tr>
<tr>
<td>High</td>
</tr>
<tr>
<td>Low</td>
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</table>
**Select the right vendor strategy**

**Choosing between an MVNE and best-of-breed is also a trade-off between risk and reward**

**MVNE**

A mobile virtual network enabler (MVNE) deal bundles all the components an MVNO requires (BSS, OSS and core network) in a single package, either as a delivered product or a managed service. It eliminates many of the integration issues that could otherwise slow deployment, or even sink the business altogether. Again, the promise is of a fast route to market, but potentially at the expense of the flexibility you can offer your customers and the margin available.

**Best of breed**

Selecting best of breed packages can be a long and expensive business, and taking responsibility for their integration is a risky enterprise. The reward will be a highly responsive and flexibly platform from which you can rapidly deploy innovative propositions to stay ahead in a fast moving industry.

**Striking the right balance**

To meet the Business Plan objectives for time to market, product and service portfolio, differentiation from competitors and expenditure profile will usually mean striking a careful balance between the options of in-house and outsource and between MVNE and best-of-breed suppliers. Getting this balance right – choosing what to do yourself and what to outsource – is critical to minimising the risks to the business and maximising returns.

Outsourcing may be the preferred option for those with brand based offers or seeking to complete on price. Outsourcing may also suit more risky market propositions where the levels of customer take-up are hard to predict or for those business with limited funding.

An in-house solution may be the preferred option for those seeking to differentiate in terms of their product or service offering or where there is a high degree of confidence in the ability to win market share and customers. An in-house solution will only be available to those with strong financial resources and a longer time horizon.
Select the right equipment vendor and negotiate good terms

Negotiating the optimal vendor agreement
Selecting the right best-of-breed systems and solutions can be a long and expensive process, and taking responsibility for their integration is a risky enterprise. The reward will be a highly responsive and flexible platform which allows you to stay ahead in a fast moving industry.

Selecting the best suppliers and negotiating the optimum deal with them requires:
- In-depth knowledge and experience of products and suppliers that are the best fit to the MVNO’s specific requirements.
- Careful specification of the business and technical requirements to ensure that the supplier is clear what is needed and can quote accurately for precisely what the MVNO requires.
- An understanding of how these systems will be integrated with the host MNO network, to ensure that the capabilities of the host network are properly exploited, and the required services can be delivered end-to-end across both the host and MVNO platforms.
- A detailed analysis of the road maps for both the product/service portfolio and the technology, so that the solution will be flexible to meet future needs and give the greatest opportunity for the MVNO to achieve differentiation.
- A clear understanding of the cost structure of the deal, so that the MVNO can accurately forecast the capex and opex budgets and can also assess the impact of changes to the Business Plan.

Critical success factors for procurement
Based on our experience with many other major procurement contracts, Coleago believes the following issues are crucial:
- The RFQ must provide a structured, clear, concise statement of requirements. Any omissions or ambiguities may be exploited later by the supplier. It needs to include functionality, interfaces, experience & local capability of the supplier, support services, licences, pricing evolution and many other contractual aspects.
- Successful integration with the host network is critical. The host operator will need to contribute actively to the RFQ process.
- There must be a clear assignment of responsibilities between the contracting parties. It is essential that suppliers take responsibility for integration and ensuring interfaces work.
- Selection of the best financial deal relies on comparing like for like between suppliers. The RFQ process will specify how current and future pricing is to be quoted and analysed.
- Contracts should be fixed price, with payments based on successful launch and supplier performance.
Deploying an MVNO is a complex and challenging task requiring world class programme management

Complexity and challenges in implementation

Deploying an MVNO involves multiple streams of fast-moving, complex and inter-dependent activities. The role of the programme manager is to monitor and control these streams while maintaining a blueprint of the end result in mind.

Each stream is required to make rapid, crisp and effective decisions in order to maintain momentum, but each decision made can impact the other streams. The Programme Manager must keep a tight control on this process, ensuring the decisions are communicated cleanly and any negative impact countered, whilst not putting any brakes or impediments on the flow of each stream.

It is a delicate balance and requires experience, effective decision making and the ability to switch between the big picture and a detailed understanding of each stream.

Business Challenges and Objectives

Put in place world class programme management
Methodology and Deliverables

Process overview

Coleago has developed a robust and flexible end-to-end process to ensure the Critical Success Factors are in place to launch successfully an MVNO.

A well established process

Coleago has supported a wide range of clients around the world with the successful launch of their MVNO propositions. We have unparalleled expertise and experience in ensuring that all the Critical Success Factors for a successful MVNO launch are in place.

Over time we have developed a robust and flexible end-to-end process that supports clients at each key stage of establishing an MVNO. The creation of our process has been informed through our work alongside both MVNOs and the host networks.

Our process encompasses developing the initial business plan and a comprehensive Excel model through engaging and negotiating with host networks and vendors to implementing the network and launching the first customer propositions.

Existing tools, templates and benchmarks

Coleago has developed a suite of business planning tools and templates which support the process.

Our Excel based business planning model has been licensed to over 30 operators around the world and ensures that our team focuses on the key issues and not building spreadsheets. When bespoke modelling is required Coleago uses its proprietary MAPPED Modelling Methodology to ensure that the resulting tools are robust, transparent and effective.

We have also developed a range of proforma templates to support the contracting and creation of the Telecoms Services Agreement as well as vendor RFQs supported by analytical tools to select the appropriate vendor.

We also have an extensive database of telecoms benchmarks to ensure that the business plan can be presented credibly.

<table>
<thead>
<tr>
<th>MVNO Business Planning</th>
<th>Operator Engagement</th>
<th>Wholesale Negotiation &amp; TSA Contracting</th>
<th>Vendor Selection and Negotiation</th>
<th>Implementation</th>
<th>Performance Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of the environment, industry, competitors and customers to refine the business “story” which is told in a business plan and Excel model</td>
<td>Analysis of the MNOs and identification of with which networks to engage followed by presentations of the business case.</td>
<td>Negotiation of the optimal win-win wholesale deal and negotiation of the comprehensive and detailed Telecoms Service Agreements</td>
<td>Preparing the RFQ and identifying potential equipment vendors before assessing and selecting a partner and negotiation</td>
<td>Programme managing the establishment of the business and network including supplier management</td>
<td>On going advice and consulting support to ensure that the new business continues to out perform and maximise the return on investment</td>
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</tbody>
</table>
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Coleago Consulting

A brief introduction to Coleago Consulting, our expertise and experience
**Coleago Consulting**

**A leading boutique telecommunications consulting and training firm**

<table>
<thead>
<tr>
<th>Since its launch in 2001, Coleago Consulting, based in the UK, has established itself amongst operators around the world as one of the leading boutique telecoms advisory firms.</th>
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</thead>
<tbody>
<tr>
<td>Preferred supplier to major global &amp; regional players</td>
</tr>
<tr>
<td>Global players such as Orange, Vodafone and Telefonica and leading regional players such as KPN, Qtel and Zain, along with regulators such as Ofcom, have selected Coleago as a preferred supplier for a wide range of consulting services around the world.</td>
</tr>
<tr>
<td>We only recruit leading industry experts</td>
</tr>
<tr>
<td>Coleago only recruits leading industry experts with over 10, 15 and even 25 years experience, many at board and director level. Our team shape industry opinion; are quoted in the Financial Times and Wall Street Journal and have written for The Economist.</td>
</tr>
<tr>
<td>End-to-end Partner level consulting on all assignments</td>
</tr>
<tr>
<td>We provide Partner level, end-to-end consulting expertise on every assignment and specialise in complex assignments requiring the highest level of expertise and experience throughout. We never use recent MBAs, juniors or associates.</td>
</tr>
<tr>
<td>Emerging market specialists</td>
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<tr>
<td>We have unrivalled experience and insight into emerging markets such as the Middle East and Africa through directorships of mobile businesses in the region and have provided advice to operators such as Qtel, Warid, MTN, Digicel and Zain.</td>
</tr>
<tr>
<td>Broad range of consulting services</td>
</tr>
<tr>
<td>Our experience encompasses mobile, WiFi, WiMAX, cable, broadband, fixed services and television. Our expertise ranges from strategy and business planning, spectrum auctions and due diligence through market forecasting, market research and market planning to interconnect and regulation, cost modelling and network planning and optimisation.</td>
</tr>
</tbody>
</table>
Coleago Consulting

Coleago has delivered assignments for global operators and smaller players

Our clients include fixed and mobile operators, MVNOs, equipment vendors, regulators and content providers
We offer practical, realistic advice that can be implemented to deliver real value

| Major operators are increasingly choosing to work with Coleago’s small, dedicated and highly experienced teams over “traditional” consultancies with their large, expensive teams of relatively inexperienced consultants. |

<table>
<thead>
<tr>
<th>Independent opinions</th>
<th>Coleago focuses only on providing independent advice, we have no commercial interest in recommending infrastructure investment, system implementations or on-going outsourcing services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small, effective teams</td>
<td>Our consultants are highly experienced, multi-skilled and have extensive project management experience – this means we can deploy smaller teams, without the hierarchy of traditional consultancies, which clients find easier to work with and integrate into their own project teams.</td>
</tr>
<tr>
<td>Practical, relevant advice</td>
<td>Our advice is based on hands on experience, much at Director and Board level, and ensures that our recommendations are realistic, practical and achievable.</td>
</tr>
<tr>
<td>Existing tools and databases</td>
<td>As we only focus on the telecoms sector we have an extensive library of modelling and forecasting tools developed specifically for the sector as well as comprehensive benchmark databases which ensure that we can be adding value from the outset of a project.</td>
</tr>
<tr>
<td>Language Skills</td>
<td>Many Coleago team members are fluent in a number of languages including French, Spanish, Arabic, German and Dutch – language skills are often crucial in delivering assignments in emerging markets.</td>
</tr>
</tbody>
</table>
**Coleago’s consultants lead and shape the industry**

**Coleago is regularly asked to speak at key telecoms conferences around the world as well as sitting on governmental working groups and industry bodies that shape the future of the industry.**

<table>
<thead>
<tr>
<th>Some of the papers published by Coleago</th>
<th>Business texts written by the founders of Coleago</th>
</tr>
</thead>
</table>
| **Fears About Debt Levels of Mobile Operators are Misplaced**  
*Article, Total Telecom & elsewhere* | **The Economist** |
| **PMR in Europe**  
*Article, Communications International* | |
| **International Accounting Rates**  
*Letter, Telecommunications* | |
| **Mobile Networks in Eastern Europe**  
*Article, Telecommunications* | |
| **A Cellular Alternative in Eastern Europe?**  
*Opinion, Mobile Europe* | |
| **Telecoms in Eastern Europe: Investing for Growth**  
*Article, Telecommunications* | |
| **Inter German Telecommunications Integration**  
*Article, Communications International* | |
| **GSM Billing**  
*Article, Communications International* | |
# Our services include advisory roles, operational support and training

<table>
<thead>
<tr>
<th>Business Planning</th>
<th>Regulation</th>
<th>M&amp;A Transaction Support</th>
<th>Performance Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Analysis &amp; Planning</td>
<td>Regulatory Cost Modelling</td>
<td>Identifying and Screening</td>
<td>Network Optimisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Opportunities</td>
<td></td>
</tr>
<tr>
<td>Market Research &amp; Forecasting</td>
<td>Spectrum and Licence Bids</td>
<td>Commercial Due Diligence</td>
<td>Geo Marketing</td>
</tr>
<tr>
<td>War Gaming and Scenario Planning</td>
<td>Interconnect Strategy</td>
<td>Technical Due Diligence</td>
<td>Product &amp; Services Development</td>
</tr>
<tr>
<td>Marketing Planning</td>
<td>Reference Interconnect Offers</td>
<td>Preparing Information Memorandum</td>
<td>Budgeting Process Re-engineering</td>
</tr>
<tr>
<td>Technical &amp; Network Planning</td>
<td>Interconnect Agreements</td>
<td>Valuation</td>
<td>Training Services</td>
</tr>
<tr>
<td>Financial Forecasting</td>
<td>International Connectivity</td>
<td></td>
<td>Excel Modelling and Bespoke</td>
</tr>
<tr>
<td>Valuations &amp; Benchmarking</td>
<td></td>
<td></td>
<td>Models</td>
</tr>
</tbody>
</table>
We have delivered projects on every continent of the globe.