plum insight

Ensuring value with Connected Capex*

Strategies for success in the commercial development of new technology programmes

Ian Corden, Paul Mankiewich, Laura Wilkinson

Whilst discounted-cash-flow methods are prevalent for project appraisal within many firms, overall performance, influenced by market pressures and managements' own self interests, is often focused on short-term measures such as quarterly earnings. We examine here the efficacy of capital investment in the telco industry; by definition, 'investment' suggests a focus on the longer term. Our analysis and experience indicates that, in many cases, investment value is being lost, due to inefficient allocation—not a healthy situation in an industry already under significant pressures. We introduce a structured approach, which we refer to as Connected Capex*, enabling telcos to stem value leakage and ensure that capital is allocated effectively—according to well-defined business needs.

Further to our direct experience in working with many telecommunications operators (telcos), Plum has recently conducted detailed analysis on financial performance across a sample of over 100 telcos worldwide. Our analysis confirms that market (and hence shareholder) value can be impaired as a result of poor operational performance, inclusive of poor capital allocation.

Where is capex headed?

Aside from a couple of notable dips around the 2001 telecoms crash and the 2008 global financial crisis, the overwhelming trend in capital expenditure (capex) consumption within the telecoms industry has been upwards, driven in the main by waves of network infrastructure build-out. Before the crash, a glut of investment resulted as many national regulators implemented policies to liberalise markets. Later, competition and the drive to roll out new technologies such as 4G wireless and digital subscriber loop (DSL) over copper access networks further drove up investment levels. Since 2008, this rise has continued, excepting a degree of current stability, as many technology programmes reach a level of transient maturity. Today, annualised industry capex exceeds the US$300bn mark.

However, telecommunications technology development and implementation is cyclical. We are now amidst a new wave of interest and development in 5G wireless, optical-fibre-based access networks, and software (cloud) based networking.

As infrastructure-based operators are driven to invest further to meet demand for new digital services, advance new business models, cope with competition and regulatory demands, and strive to improve cost efficiencies, we see no respite in the capex challenge.

What drives capex?

Many factors drive capex; in addition to the obvious needs to support new products and services and to accommodate ongoing traffic growth, there may be a mix of valid functional (product-related) and non-functional (infrastructure-related) requirements. Key drivers typically include:

- Products and traffic, new and growth, new technologies, competition
- Maintenance, asset replacement
- New build, greenfield programmes
- Regulatory demands, service and contract obligations
- Capitalised non-network items (e.g. spectrum, systems integration, professional services)
- Programmes to improve efficiency, cut costs (which can require expenditure)
- Customer experience (CX) improvement programmes, IT, customer and billing platform upgrades
- M&A, special projects, acquisitions, integration projects
- Engineering policies, volumes

How will new technologies impact capex?

From our experience and engagement with vendors and industry leaders, we expect that 5G technology will bring benefits in connectivity (bandwidth and volume), lower latency, and increased seamlessness across varied radio interface technologies. However, as the efficiency of radio systems continues to improve, we estimate only limited incremental performance improvement in cell average

* 'Connected Capex' is a term used by Plum Consulting London LLP to describe its consulting solutions associated with capex efficiency.

spectrum efficiency (hence cost efficiency) (circa x2.2 relative to commercially available LTE-Advanced systems). Consequently, we do not expect 5G systems to offer radical improvements in capex efficiency *per se*; rather, new business models (e.g. dense networks of small cells, heterogeneous networking, access to new vertical markets) will be required to enable telcos to sustain healthy cashflows and margins.

Similarly, in fixed networks, telcos are under pressure to invest in, or gain access to, new optical fibre-to-the-premise (FTTP) networks, to replace ageing copper access DSL lines. In addition, substantive fibre backhaul capability will be required to support 5G radio systems.

Looking towards other technologies, software-defined networking (SDN) and network function virtualisation (NFV) enable cloud-based core operation by virtue of software-based network elements running on cost-efficient hardware platforms. Newer 'intent' networking methods are also being developed to enable improved network control, optimisation, and automation. However, whilst becoming established in core networks, these remain unproven in access and transport networks which typically comprise well over 50% of network-related investment costs. We expect that software-based networking will offer some advantages for telcos in time-to-revenue, but only limited cost benefit in access and transport networks—where majority capital expenditures lie for the foreseeable future.

Overall, with strategic imperatives looming, infrastructure-based telcos will be faced with the need for significant investment over the coming few years. This, amidst intense competition from over-the-top (OTT) players and others, and rising pressures on margins as traffic levels continue to escalate. In addition, there will remain ongoing needs for tactical investments (which can be sizeable), to mitigate churn and address near term issues.

What's wrong with capex?

In addition to the challenge on capex scale, is the rather more elusive issue of capex efficiency. To some extent, this problem exists due to established industry structure and operational processes. Telecoms networks and IT systems are inherently complex at both functional and architectural levels; systems are typically procured and managed within CTO and CIO organisations, with support from procurement and sign-off from finance divisions, often at a 'black box' level. The telco capex process evolves year on year: '*we need more capex because we need to meet demand for more coverage and more capacity*'; in some cases, capex over-engineering results. Large programmes are assembled across technology silos, often with impervious detail in bills of material (BOMs) with vendors and lost purpose with business stakeholders, and so the 'capex handle' is cranked for yet another year. What is often missing is effective programme linkage to strategic objectives, enabling the business to plan and realise value.

There is also the issue of short-termism. Whilst discounted-cash-flow methods are well established in industry as a means for project appraisals, it is overwhelmingly the case that short-term measures (e.g. quarterly earnings) are used to set overall performance levels. Evidence shows that many firms are prepared to cut R&D or even positive NPV projects if it helps meet short terms goals[1]. In the extreme, dubious accounting practices can even be invoked. The reality is that missed earnings can cause share prices to plummet or investors to think twice. But without balance, this can lead to excessive tendency towards tactical projects and may be profoundly unwise in an industry such as telecoms—where large scale capital investments are typical. Studies have shown that those firms that do invest effectively for the future tend to accrue greater value than those that don't[2].

Critically, for many telcos, capex allocation is asset-led, not business-led. Left unchecked, this situation naturally gives rise to low-value investment (e.g. stranded assets), or value leakage, and this can be ill-afforded in today's markets.

The problem then, with capex, for telcos, is centred as one of how to attain capital allocations which correlate well with meeting strategic business objectives (rather than merely those of asset silos, or tactical initiatives). Practically, this means that in many cases, key management processes are broken, ineffective, or worse—not even established.

What is value and what drives it?

Of course, value can be about more than money, but for investors, financial value (i.e. enterprise value or stock price) (coupled with risk management) is usually what matters most.

As might be expected with potential weaknesses in capital allocation, the scale of capex allocated in any one case provides no useful insight into valuations; a high volume of capex could result in a number of programmes with poor economic return and *vice-versa*. There is thus no simple correlation between scale of capex employed and resulting industry valuations.

Rather, market value is, in reality, driven by a combination of book value (i.e. assessments based on widely available data) and expected performance. Market value increases for a given venture with book value and when expectations on value growth exceed those already embedded in known or accepted data. In a fully efficient market, value will quickly be 'equalised', but this is often not the case in reality—hence the volatility of stock markets and the challenges in valuations often associated with M&A deals. Put differently, investors typically are more willing to take a chance on ventures demonstrating potential for economic value development than those with a track record of wealth destruction[3].

To look more deeply into value, we analysed comprehensive and accurate financial data for a global sample of over 100 telcos. By segmenting market performance according to economic value trends, it becomes evident that market value tends to run higher for those telcos able to produce a level of consistent economic profit[4] (calculated in the standard way as net operating profit after tax, less a charge on capital employed) (see Figure 1). For our industry sample as a whole, economic performance fared poorly—with

"The [telecoms] industry is not returning enough [on capital]."

CEO, leading international infrastructure based telco, UK.

Source: Plum research, 2017.

consistently negative economic profits over the past decade or so. By developing understanding on economic (rather than accounting) performance, telcos can assess the likelihood of poor capital allocation and develop effective measures for redress.

The bottom line? In the main, telcos invest too much capital in programmes that do not result in economic value, and market value tends to go up in those ventures or firms which do demonstrate a record of good economic performance.

Connecting capex with value

With an objective of value creation for investors, it therefore stands to reason that firms must seek to invest wisely; that is—they must seek to ensure that capital deployed is effectively and efficiently connected to economic value and hence to investment returns.

How can telcos realise this objective? The key is in strategic planning and operational delivery of programmes which focus tightly on economic performance. Programmes may be built to add value via new high performance investments, or to limit or remove investments that are under-performing. In our experience, highly performing telcos work to ensure: avoidance of competition on resources, 'hard' links between holistic strategy and technology programmes, balance in short-long term objectives, and strong cross-functional team working. Number crunching in isolation by financial analysts (or pure-play financial consultants) will be no more useful than technology procurement in isolation by technologists.

Crucially, unlocking of value demands deep industry knowledge and experience spanning business and technology domains, together with proven capability to connect strategic planning with operational programmes.

From our experience in working with telcos to improve capex efficiency, we typically find that, on average, c. 20% of annual programme related capex can be released. This may be directed towards high value initiatives, cashflow savings, or used to reduce debt and equity exposures.

Building a Connected Capex* telco

First, at the strategic planning stage, a clear understanding must be developed between business objectives and technology investment programmes. This can be achieved using a structured and highly collaborative process to develop investment models to capture strategic goals, define technology elements, quantify financial and economic performance, and produce clear management reports.

Second, capex allocation processes must be tested and if necessary improved to ensure strong and embedded linkage between all key functional areas including capex management, strategic planning, and technology delivery teams. Clearly, process development must involve rigorous process design and documentation, together with effective knowledge sharing and training—to ensure 'buy-in' from all relevant teams.

These two critical stages are embodied within the Strategic Analysis stage of Plum's Connected Capex* approach (see Figure 2); key deliverables include (i) a detailed capex allocation tool, which can be used to report on and develop the quality of investments against business objectives, and (ii) a capex process audit and development plan, which can

Figure 1. Value accrues for telcos where capital is allocated effectively.

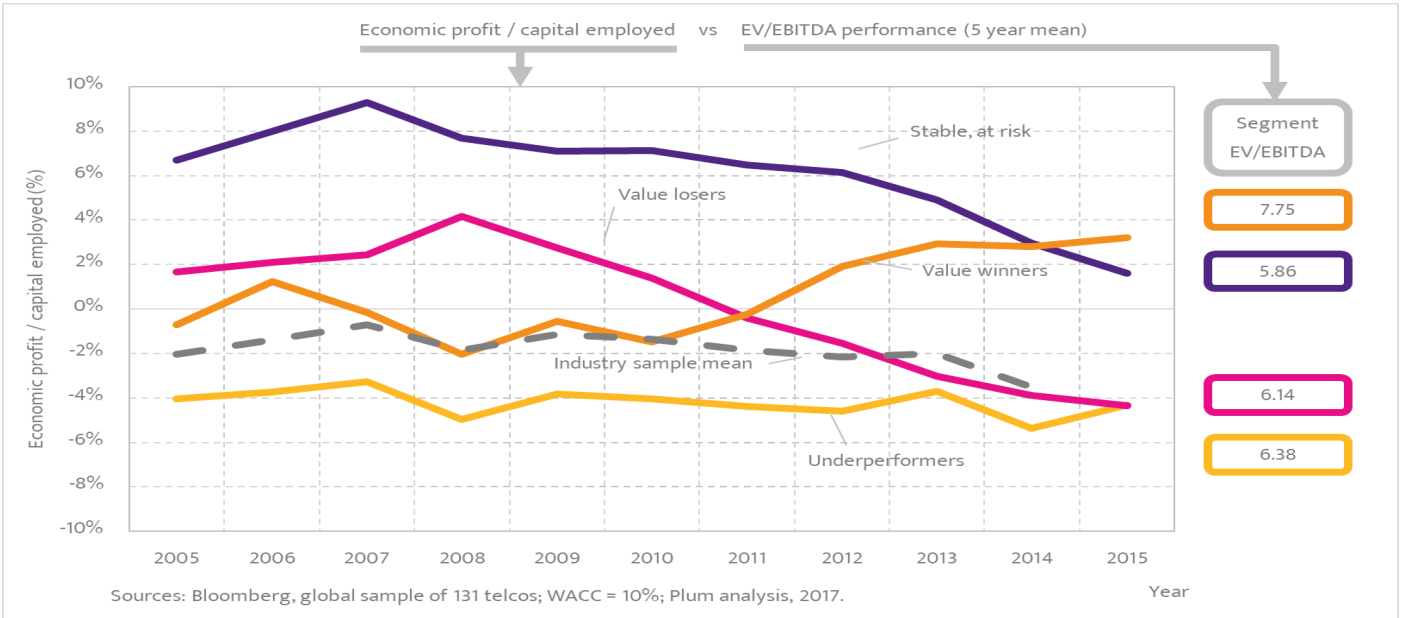
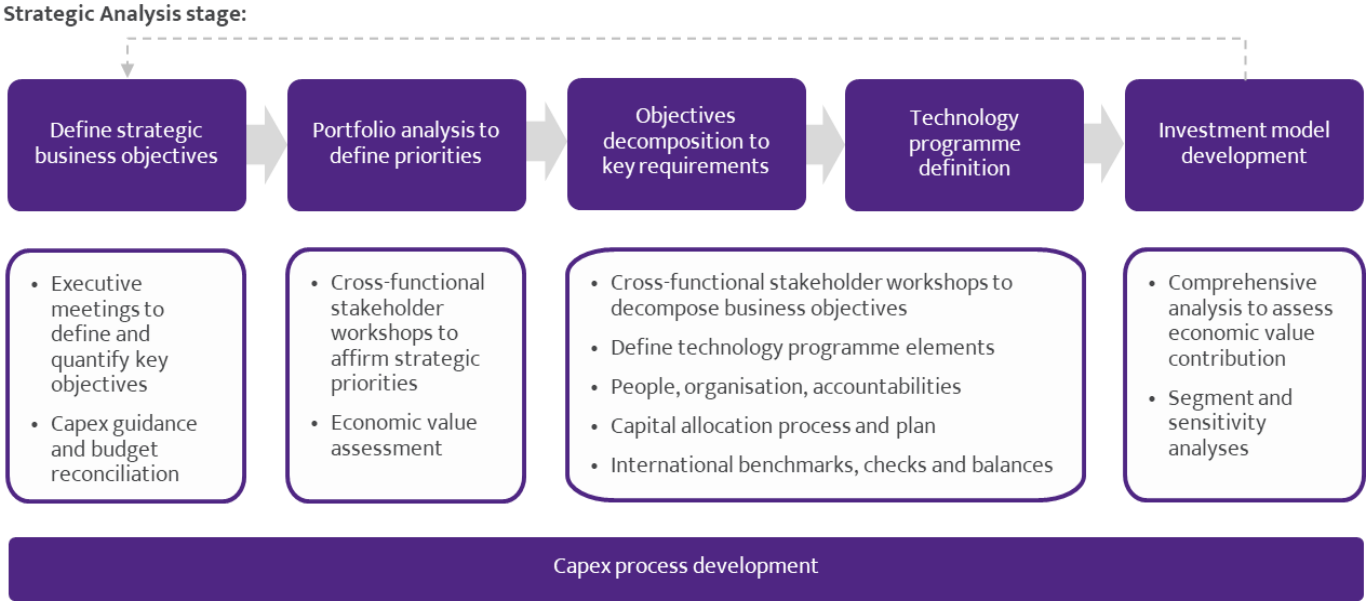


Figure 2. Plum's Connected Capex* solution enables telcos to improve capex allocation efficiency.



be used as a basis for process improvement. Subsequent to alignment on strategic plans, later Solution Development stages can be invoked to render implementation of selected technology programmes.

Within Strategic Analysis, *experience counts* and this has been built strongly in to Plum's methodology. Good practice rests in the development of a manageable number of strategic objectives (c. ten to fifteen), which should be defined in quantitative and qualitative detail. These must then be assessed according to strategic value (which should be quantified in economic terms) and urgency, using portfolio analysis—to define priority programmes. Functional and non-functional business objectives are then decomposed via solution workshops to define a target technology architecture. An investment model is then developed to link business objectives to technology investments required. Segment and sensitivity analyses can be further applied to refine results which can be fed back to sense-check objectives and portfolio decisions.

Conclusions

With telcos facing the need for a new wave of investment to meet varied market, regulatory, and business demands, the capex challenge remains unmitigated. However, our experience and analysis indicates that many telcos are leaking significant levels in investment value, due to impaired processes which do not effectively traverse divisional silos. This situation can be ill-afforded, given the pressures incumbent upon many telcos in today's markets.

Redress must call upon deep experience across both business and technology domains, and solutions—focused towards building of economic value—must be embedded within telcos in the form of revised processes.

Plum's Connected Capex* methodology critically analyses and develops linkage between business objectives, programmes, and economic value, delivering key processes and plans, enabling infrastructure-based telcos to plan and implement programmes which reduce capex inefficiency.

About the authors

Ian Corden is a Director at Plum, with over 20 years of experience in global telecommunications, specialising in emerging technologies, strategy, and financial analysis.

Paul Mankiewich is an accomplished industry executive, formerly CTO with Cisco, Lucent, and Juniper Networks. He is a global authority on emerging network technologies.

Laura Wilkinson is an Analyst at Plum. She is experienced in financial and economic modelling and industry research.

How Plum can help

As an independent consulting firm, dedicated to the telecommunications, media, technology, digital and adjacent sectors, Plum is expertly positioned to help. For information, please contact Ian Corden by phone: +44 7399 581978 or by email: ian.corden@plumconsulting.co.uk

References

1. 'The economic implications of corporate financial reporting', J. R. Graham, C. R. Harvey, S. Rajgopal, National Bureau of Economic Research, 2004.

2. 'Short-termism and corporate myopia: the values assigned by the market to short-term and long-term firms', J. Alexander, Claremont McKenna College, 2016.

3. 'The EVA style of investing', J. A. Abate, J. L. Grant, G. Bennett Stewart III, The Journal of Portfolio Management, 2004.

4. 'Free cash flow (FCF), Economic Value Added (EVA), and net present value: a reconciliation of discounted cash flow valuation', R. E. Shrieves, J. M. Wachowicz Jr., The Engineering Economist, Vol. 46, 2001.