IBISWorld Procurement Report: 31275718

Enterprise Mobility Management Software

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IBISWorld
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About this Report

This report is intended to assist buyers of enterprise mobility management (EMM) software. EMM software connects mobile devices to a network. There are three main components to EMM software: device management, application management and information management. Examples of EMM software include mobile device management (MDM) programs and mobile enterprise application platforms (MEAP). This report excludes networking software not pertaining to mobile devices.

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At a Glance

Recent Price

1.9%

Rising adoption of online services and mobile devices as well as swelling private investment in computer networks have driven up demand for EMM software, which has allowed suppliers to raise their prices.

2013-2016

Forecast Price

1.6%

Demand is projected to continue to rise, and the market is expected to become increasingly concentrated. In turn, suppliers' pricing power is anticipated to grow, allowing them to continue raising their prices.

2016-2019

Growth percentages represent annualized data.

Market Characteristics

Availability of Substitutes	Market Share Concentration	Product Specialization	Switching Costs
LOW	MEDIUM	HIGH	HIGH

Market Risk

Recent Demand Driver Volatility	Recent Price Volatility	Vendor Financial Risk	Supply Chain Risk
MEDIUM	LOW	LOW	LOW

Buyer Power Score

3.1

See p. 24 for details.

Benchmark Price

$71.10

per device per year

Key Price Drivers

- Average wages – software publishing
- Overhead costs – advertising
- Number of mobile internet connections
- Private investment in computers and software
- Percentage of services conducted online

Major Vendors

- SAP SE **15-20%**
- Microsoft Corporation **5-10%**
- VMWare Inc. **5-10%**
- MobileIron Inc. **5-10%**
- Good Technology **5-10%**

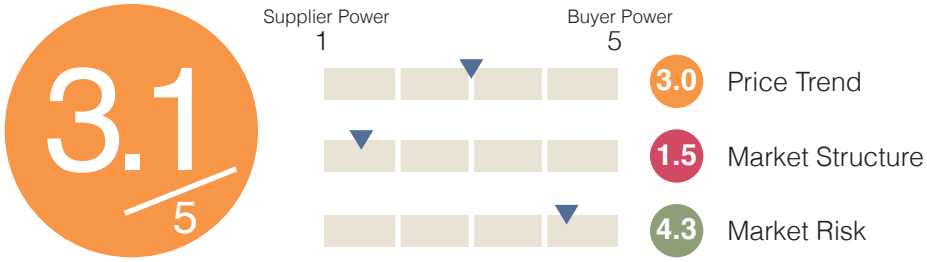
Vendor Cost Benchmarks

24.5%↓	38.0%	32.0%↑	5.5%↓
Profit	Wages	Overhead	Purchases

Arrow indicates trend during past year and next year.

Executive Summary

Buyer Power Score



The IBISWorld Buyer Power Score is a weighted score based on a number of quantitative and qualitative criteria associated with buying a product or service. The score is calculated between 1 and 5, with 1 signifying low buyer power and 5 meaning high buyer power. The more power a buyer has the greater leverage they have to get lower prices and better contract terms. For more information see page 24.

Executive Summary

The enterprise mobility management (EMM) software market has a buyer power score of 3.1 out of 5, which reflects mixed negotiating conditions for buyers. During the three years to 2016, buyers have benefited from strong competition stemming from low geographic boundaries, which allow buyers to reach virtually any supplier in the market. Additionally, the growing proliferation of cloud computing has boosted market entry and competition, allowing buyers to assess more suppliers side by side. Because cloud computing lowers the upfront costs associated with procurement as well as buyers' dependence on complementary equipment, the rising adoption of cloud computing technologies has helped to somewhat temper the high average cost of switching suppliers.

Buyers also benefit from the low level of supply chain risk. High competition among upstream vendors reduces the risk of input price shocks. In turn, suppliers have had minimal difficulty managing their supply chains and maintaining consistent pricing strategies. This low risk stabilizes price growth and the viability of long-term contracts, which further aids buyer power.

However, a number of factors hurt buyer power. During the past three years, the adoption of mobile devices has skyrocketed, services have increasingly shifted online and businesses have increased their spending on computer networks. Together, these forces have driven up demand for EMM software, encouraging gradual price increases and eroding buyers' leverage. This trend is projected to continue through 2019. In addition, as acquisition activity grows and large suppliers gain greater control over the market, buyers will become increasingly dependent upon providers with substantial pricing power in the market. This trend, combined with the lack of effective substitutes for EMM software, will limit competitive pressure in the next three years, hurting buyer power.

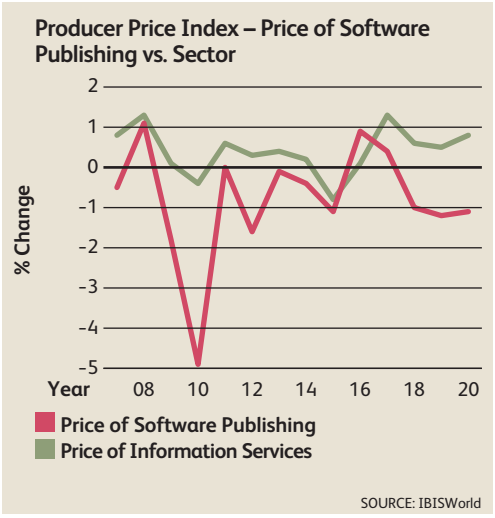
Price Environment

Price Summary

Three-year Price Trend 1.9%

Three-year Price Forecast 1.6%

- Factor is a threat to buyer
- Factor should be investigated
- Factor is not a threat to buyer



Price Fundamentals

Average Price	$71.10 per device per year
Price Range	WIDE: $12.00 to $120.00 per device per year
Key Pricing Factors	Functionality Level of customization Scope of services Security features

Benchmark Price

The average price for EMM software is estimated at $71.10 per device per year. This price reflects the average price of a bundled software package, including a back-end MEAP and a front-end MDM component. This price excludes additional security software modules. The price of such a package, however, ranges widely from $12.00 to $120.00 per device per year. Key pricing factors include the software's functionality, level of customization required, scope of supporting services provided and security features.

EMM software varies widely in functionality. Software with more complex capabilities will be of greater value to buyers and is therefore in higher demand. As such, EMM software that provides more mobile interaction with email, documents, CRM records or business analysis apps is generally more expensive. Furthermore, extra time, labor and research are required to provide additional features, adding to the cost of manufacturing products with more complex functionality. Consequently, EMM software prices typically rise with the level of functionality provided.

The software customization required will also affect the price. Each buyer's network is unique and will require some level of customization. However, the degree to which a customized solution is required will vary across buyers. Buyers that use cloud-hosted EMM software will generally pay a lower price due to the lack of customization required for data processing. However, buyers of on-premise hosted EMM will require more customization to run on the on-site servers. Customizing software to a buyer's particular needs adds to the

Price Environment

Price Fundamentals continued

labor required and reduces the supplier's ability to leverage economies of scale. Consequently, software requiring more customization is generally more expensive.

The level of support that is provided with the EMM software can also influence the price. Support can include live phone support or online chat. Additionally, for more complex in-house systems, suppliers can deploy technicians to the buyer's site. EMM software can be difficult to configure and challenging to operate. The level of support provided to buyers varies across vendors. Providing additional support and training imposes additional costs on suppliers, which are often passed on to buyers in the form of higher prices.

Finally, pricing for EMM software varies depending on its management security features. EMM software comes with a wide variety of tools to install, distribute, manage and track the applications and information used on mobile devices. EMM software can also include many security features that prevent unauthorized access and protect company data. Prices for EMM software increase with additional management and security features.

Pricing Model

EMM software provides buyers immense value, so suppliers generally mark up their prices using a value-based pricing model. Under this model, rates are determined based on which features and benefits are included. Providers generally offer two to four different packages that bundle together various management and security features. Higher-priced packages offer more powerful features, more robust security options and better access to customer service.

Although nearly all suppliers use a value-based pricing model, their billing models vary. Most suppliers use a subscription-based billing model. After discussing the number of applicable mobile devices, the features and the method of deployment, buyers are charged on a monthly or annual basis for each mobile device managed by the software. This pricing model offers buyers substantial flexibility because they can use the software without having to make any other capital investments to run it. Monthly and annual subscription rates also benefit buyers by creating stable recurring costs that allow buyers to easily calculate annual expenditure.

Alternatively, some suppliers offer perpetual licenses, whereby the buyer pays a large one-time fee to use the software indefinitely. However, these buyers still need to pay for maintenance and upgrade fees or their software will quickly be rendered ineffective. With a perpetual license, buyers are required to pay a much larger upfront price than they would under a subscription-based model. However, over time, the total cost of ownership will be much lower for software purchases made under this pricing model.

Price Drivers

Price Driver Volatility Level: MEDIUM

Price driver volatility has been moderate in the EMM software market in the past three years. Suppliers of EMM software rely heavily on labor and advertising, and the costs of these inputs have been stable during the three years to 2016. However, the number of mobile internet connections and the percentage of services conducted online have demonstrated higher levels of volatility due to significant year-on-year gains. Despite the somewhat uneven growth in demand, however, stable input prices have helped suppliers effectively manage their costs. As a result, overall prices for EMM software do not fluctuate rapidly as

Price Environment

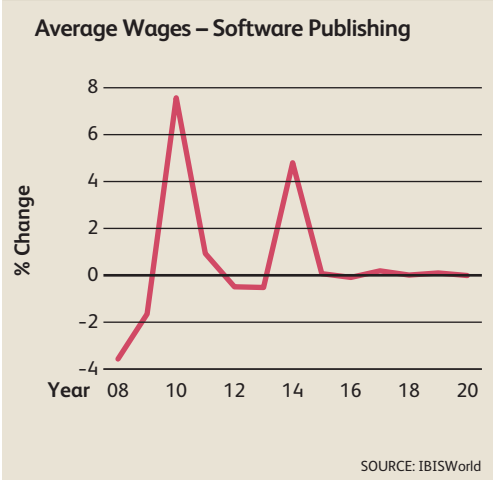
Price Drivers continued

suppliers aim to gain and retain market share by offering prices in line with their competitors.

Input Cost Drivers

Average wages – software publishing: Wages are the largest cost factor for EMM software providers and make up 38.0% of total revenue. Developing EMM software requires skilled computer engineers and programmers. Historically, competition to hire computer programmers has been fierce because EMM software providers have to compete with many other software providers and developers for employees. However, the number of college students graduating with computer science degrees has been rising rapidly, thereby curbing wage growth for software publishing professionals. As a result, in the three years to 2016, average wages have risen at an estimated average annual rate of 1.6% as suppliers have hired more skilled engineers to innovate the software. Meanwhile, wages as a share of revenue have remained fairly stable within the EMM software market. Average wages are expected to continue rising marginally during the three years to 2019 at a projected annualized rate of 0.1%. In turn, IBISWorld anticipates that wages as a share of revenue will remain largely unchanged in the coming years. Due to the stability of wages as a share of revenue, wage trends are expected to have little impact on market prices.

Overhead costs – advertising: Overhead accounts for about 32.0% of total revenue and includes costs associated with research and development (R&D), marketing, advertising, depreciation, rent and utilities. Of these costs, marketing and advertising make up about 16.0% of total revenue, more than any other factor. The EMM software market is very competitive, and providers spend



significantly on marketing and advertising to differentiate themselves from other providers and to educate potential buyers on the benefits of EMM software. In the three years to 2016, economic growth has provided businesses with more money to spend on advertising. In turn, demand for advertising has grown, causing suppliers' advertising expenses to rise at an estimated annualized rate of 1.4% during the period. Rising advertising expenses have pushed overhead costs upward and, in turn, applied upward pressure on EMM software prices. During the three years to 2019, spending on advertising is projected to continue to rise at an annualized rate of 1.3%, further encouraging price growth.

External Demand Drivers

Number of mobile internet connections: Employees have been increasingly using their mobile devices to access the internet and perform business activities online. As the number of mobile internet connections increases, so does the need for solutions that manage mobile devices, applications and information running through the mobile network. In the three years to 2016, the number of mobile internet connections has increased rapidly at an estimated

Price Environment

Price Drivers continued

annualized rate of 14.6% due to improved broadband connectivity, more powerful applications and the rise of cloud computing technology. As a result, demand for EMM software needed to manage these devices has grown. In the three years to 2019, the number of mobile internet connections is projected to continue growing, albeit at a much slower average annual rate of 5.7%. This growth indicates a sustained need for EMM software, giving providers significant leverage to raise prices and harming buyer power.

Vendor Average Cost Structure	Proportion of Revenue (%)
Profit	**24.5**
Wages	**38.0**
Purchases	**5.5**
Overhead	**32.0**
Marketing & Advertising	16.0
R&D	9.0
Rent & Utilities	2.0
Other	5.0
Total	**100.0**

SOURCE: IBISWorld

Private investment in computers and software: Private investment in computers and software measures the total annual expenditure by businesses on information processing equipment and software, including EMM software. Increased investment indicates that businesses are willing to spend more on EMM software to manage their mobile devices. In the three years to 2016, private investment in computers and software has grown at an estimated average annual rate of 4.3%. As the economy improves, companies will have more resources and confidence to increase their investment in technology. Thus, during the three years to 2019, private investment in computers and software is expected to continue growing at an average annual rate of 3.7%. This growth suggests that there will be stronger demand for EMM software in the coming years, which will give suppliers leverage to raise prices.

Price Driver Statistics

	Average Wages – Software Publishing ($)	Change (%)	Overhead Costs – Advertising (Index)	Change (%)	Number of Mobile Internet Connections (Million)	Change (%)	Private Investment in Computers & Software ($b)	Change (%)	Percentage of Services Conducted Online	Change (%)
2007	139,255.11	7.68	105.00	0.90	15.99	159.20	524.10	8.90	4.04	25.10
2008	134,272.43	-3.57	106.00	1.00	24.32	52.10	537.20	2.50	4.68	15.80
2009	132,053.65	-1.65	105.10	-0.80	48.87	100.90	512.90	-4.50	5.75	22.80
2010	142,050.31	7.57	105.10	0.00	86.40	76.80	535.60	4.40	6.42	11.70
2011	143,374.33	0.93	105.90	0.80	130.72	51.30	557.70	4.10	7.05	9.80
2012	142,667.12	-0.49	107.40	1.40	161.73	23.70	589.70	5.70	7.89	11.90
2013	141,920.62	-0.52	109.10	1.60	194.04	20.00	613.20	4.00	9.60	21.70
2014	148,740.33	4.80	111.40	2.10	219.40	13.10	639.10	4.20	10.96	14.10
2015	148,857.88	0.07	112.80	1.30	242.00	10.30	671.80	5.10	12.68	15.70
2016	148,719.22	-0.09	113.70	0.80	291.88	20.60	695.65	3.60	14.20	12.00
2017	149,004.70	0.19	115.80	1.80	311.43	6.70	718.95	3.30	14.78	4.10
2018	149,028.13	0.01	117.60	1.60	325.19	4.40	746.27	3.80	15.96	8.00
2019	149,190.14	0.10	118.20	0.50	344.56	6.00	776.79	4.10	17.66	10.60
2020	149,165.03	-0.01	119.70	1.30	362.24	5.10	801.66	3.20	19.47	10.30

SOURCE: IBISWorld

Price Environment

Price Drivers continued

Percentage of services conducted online: Tablet computers and smartphones provide a convenient way for buyers to take advantage of a wide variety of online services. Therefore, demand for tablets and smartphones, as well as the EMM software needed to manage these devices, grows as the percentage of services conducted online increases. During the three years to 2016, the percentage of services conducted online has increased an estimated 4.6 percentage points as businesses have increasingly moved their services online to raise the efficiency and cost effectiveness of their operations. This factor has driven up demand for EMM software. In the three years to 2019, the percentage of services conducted online is forecast to grow another 3.5 percentage points. This growth is expected to keep driving up demand, thereby giving providers additional leverage to raise software prices.

Recent Price Trend

Three-Year Average Annual Price Trend: **1.9%**

Price Volatility: **LOW**

In the three years to 2016, the average price of EMM software has risen at an estimated annualized rate of 1.9%, as demand for EMM software has increased alongside suppliers' overhead costs.

As more services have shifted online, there has been a greater need for mobile devices to access these services. Moreover, improved broadband connectivity and processing speeds have increased the effectiveness of mobile devices, making them increasingly comparable to desktop computers. Together, these trends have boosted the value of mobile devices and caused tremendous growth in the adoption of mobile technologies, especially among businesses. In turn, more businesses have been purchasing and implementing EMM software to manage these devices more effectively. As a result of the additional demand generated, suppliers have been able to raise market prices.

Additionally, economic growth in the United States has caused businesses to devote more money to advertising. As demand for advertising services has grown, advertising agencies have been able to raise their prices, causing a rise in overhead costs for EMM software suppliers. Overhead cost growth has applied upward pressure on EMM software prices.

At the same time, the rise of cloud-computing technologies has helped to mitigate price growth during the period. The development of cloud-computing technology has lowered delivery costs for providers, limiting the extent of the recent swells in their overhead costs. Cloud computing has also lowered the barriers to entering the market, enabling more companies to provide EMM software and slowing market consolidation. Together, these benefits have reduced suppliers' incentive to raise prices.

Buyers have also benefited from low price volatility in the market during the three years to 2016. During the period, supply chain risk has been low. Steady trends in input costs have allowed suppliers to maintain consistent pricing strategies, affording buyers great ease in budgeting for EMM software expenses.

Price Environment

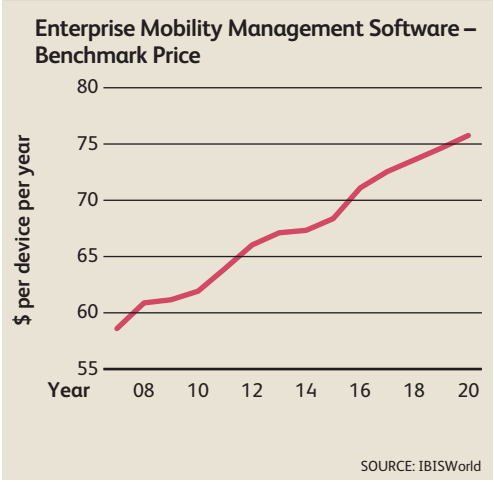
Price Forecast

Three-Year Average Annual Price Forecast:
1.6%

During the three years to 2019, the price of EMM software is projected to rise at an annualized rate of 1.6%. Demand growth will continue to be the leading force behind this price inflation. Because prices are anticipated to rise further, buyers are encouraged to procure EMM software as soon as possible and use long-term contracts to lock in current rates.

In the next three years, internet and mobile device adoption is expected to continue growing, which will encourage businesses to seek out solutions for integrating mobile devices into their networks. Furthermore, the economy is expected to improve, providing businesses with the means to invest more in building their networks. Thus, businesses are anticipated to have more incentive and additional resources to develop their mobile platforms. In turn, the demand for EMM software will swell, giving suppliers more pricing power.

Moreover, in the three years to 2019, overhead costs are forecast to continue rising. Increased expenditure on advertising will continue to allow advertising agencies to raise their prices, causing overhead costs for EMM software suppliers to rise. Rising operating costs will encourage suppliers to increase their prices, thereby eroding buyer power. Nonetheless, cloud computing technologies are expected to improve through 2019. As a result, distribution costs will continue falling, helping to offset rising advertising costs to an extent. In addition, cloud computing will allow buyers to obtain EMM software as a service (SaaS), which is projected to lower switching costs by eliminating the need for hardware upgrades. As such, buyers will be able to access more suppliers, thereby preserving strong price competition in the market.



Buyers will also continue benefiting from low price volatility during the next three years. Stability in suppliers' operational costs will allow them to maintain consistent pricing strategies. Prices should not fluctuate unexpectedly during the period, making it easy for buyers to budget their expenses and strategically time procurement.

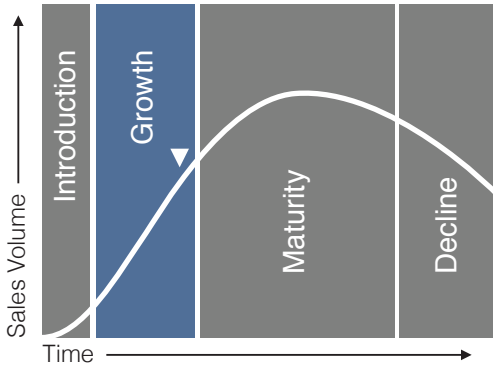
Product Characteristics

Product Life Cycle

EMM software is in the growth stage of the product life cycle, as evidenced by rapid sales growth during the past three years and further growth anticipated in the three years to 2019. With increased processing power and improved broadband connectivity, mobile devices such as tablets and smartphones are replacing the use of desktop computers in many respects. Almost 70.0% of employees use their own devices at work, a percentage expected to grow even further. As such, companies will have greater need for EMM software to manage these devices, leading to strong sales growth.

The growth stage of the product life cycle presents difficulty for buyers in many respects. In response to growth in demand, price inflation is forecast to continue. Products in the growth stage also often experience significant change, creating the risk that buyers may purchase software that will soon become obsolete.

Life Cycle Stage: **Growth**



Life Cycle Factor	Enterprise Mobility Management Software Characteristics
Price Trend	Strong demand from a wide variety of industries has given providers leverage to raise prices in response to rising overhead costs during the three years to 2016. Price growth is forecast to continue through 2019 as demand, operational costs and market share concentration rise.
Product Change	Smartphones, operating systems and applications are constantly changing. As a result, product change for EMM software has been high while suppliers have sought to address these changes. High product change creates the risk that buyers could purchase or install EMM software that quickly becomes obsolete.
Distribution Scope	The distribution scope has been widening as cloud computing technologies extend the reach of suppliers throughout the market. A widening distribution scope is beneficial for buyers because it gives them greater access to a greater number of providers.
Marketing Trends	Marketing and advertising expenditures have been high because providers seek to differentiate themselves and educate buyers on the benefits of their EMM software. Suppliers primarily use webinars and white papers distributed online to deliver their marketing message.

Total Cost of Ownership

Total Cost of Ownership **MEDIUM**

The total cost of ownership for EMM software is medium because there are several additional costs to consider before purchasing. The moderate total cost of ownership increases the likelihood of the buyer incurring additional costs further down the road. The buyer must first consider installation and integration costs. EMM software is a complex software platform used to manage all of the buyer's mobile devices. The buyer will need to ensure that the software is compatible with the buyer's mobile devices as well as with other software products. As a result, most buyers purchase installation and integration services in addition to EMM software. These installation and integration costs

Product Characteristics

Total Cost of Ownership continued

can be fairly expensive, especially if the buyer purchases an on-premise solution instead of a hosted or software-as-a-service (SaaS) solution. With an on-premise solution, the buyer will need to purchase additional computer servers and network equipment, adding to the total cost of ownership.

After the software is installed, the buyer will also need to purchase maintenance, support and upgrade services. Considering the fast pace of change for mobile devices, buyers will probably require these additional services to ensure that their EMM software is up to date. These costs are recurring and typically add an additional 20.0% to the benchmark price. Buyers can lower costs by discussing package deals wherein these services are discounted with the purchase of EMM software. Finally, buyers should also consider additional telecommunication costs. Although these costs are not a direct result of EMM software, these costs will arise as the buyer implements widespread use of mobile devices in their company.

Product Specialization

Product Specialization **HIGH**

EMM software is generally a highly specialized product that is tailored to the buyer's needs. The operating systems, mobile devices and coding language that each buyer uses will vary considerably, which requires a customized solution. Although buyers with simple networks and fewer users will sometimes be able to effectively use a more standardized prepackaged or cloud-based platform, they will still require a customized solution for integrating the software into their network. Additionally, EMM software suppliers require a high level of technical knowledge to construct and integrate these platforms. The high level of specialization within the EMM software market limits the availability of suitable suppliers and thereby weakens buyer power. Furthermore, the high level of product specialization increases switching costs for buyers because they must spend more time and resources to customize their solutions with a new supplier.

Related Goods

In addition to EMM software, providers also sell additional products such as workspace management and containerization solutions, in addition to security software. Purchasing these products and services together reduces the complexity of managing mobile devices in an organization. Buyers can also achieve cost savings with these products, because these products can be discounted when purchased together as a bundle.

Related Goods	Description
Workspace Management & Containerization Solutions	Workspace management and containerization solutions allow employees to keep their personal data and applications separate from company data and applications. With more companies employing bring your own device (BYOD) strategies and mixing personal and professional IT, workspace management solutions have become increasingly necessary.
Security Software	Security software protects and ensures the buyer's information and data is safe. Examples of security software include authentication, anti-virus and encryption software, as well as firewalls.

Product Characteristics

Substitute Goods

Availability of Substitutes: LOW

There are no viable substitutes for EMM software. As a buyer's company grows and uses more mobile devices, security risks and management complexity will rise exponentially. As such, EMM software is required to manage and track these mobile devices as well as the applications and data on them. Currently, no other product can adequately manage mobile devices on a large scale. A lack of substitutes means that buyers are unable to turn to alternative products to meet their needs and are more dependent on EMM software, lowering their negotiating power.

Regulation

Regulatory Change: MEDIUM

The rate of regulatory change in the EMM software market has been moderate in the past three years. Regulation primarily pertains to employee privacy and data security. The BYOD trend has increased flexibility and convenience for organizations. However, this trend has blurred the lines between the personal and professional lives of employees. Because EMM software is used to monitor the use of applications and the flow of information on mobile devices, there is concern that managers or even the original provider could use the software to illegally spy on employees' activities. As a result, many EMM software offerings include containerization or workspace management tools where personal data and applications are kept separate from business data and applications. Before they implement their software, buyers should communicate with employees about how EMM software can track and monitor information and operations. In addition to employee privacy, companies in certain sectors (i.e. utilities and finance) can have sensitive data and thus higher security requirements. As such, these companies will need to purchase EMM software with equally stringent requirements. Generally, buyers should ask about which security measures are included with the EMM software and proceed accordingly.

Despite the moderate pace of regulatory change, EMM software is a new technology that is not yet subject to much regulation. As use of smartphones and mobile devices increase, new regulations will be implemented in the coming years. Software providers may have to incorporate stricter privacy and data security measures, raising development costs, which may be passed on to buyers.

Quality Control

Key Quality Factors
- Device management
- Application management
- Information management
- Security

In evaluating EMM software, buyers should first look at its ability to manage mobile devices, also known as mobile device management or MDM. EMM software should offer a central location to add and remove mobile devices, track their status and data usage and shut down and erase all data on the device if they are lost. Although MDM is the core function of EMM software, EMM software is also used to manage applications, information and data; these capabilities are referred to mobile application management (MAM) and

Product Characteristics

Quality Control continued

mobile information management (MIM) and also determine quality.

MAM describes the delivery and administration of software and applications onto mobile devices. Individually checking every application on every mobile device is a prohibitively difficult and time-consuming task. As such, EMM software should have remote administrative capabilities where IT staff can track how applications are used. EMM software should also be able to create white lists of which applications are acceptable and blacklists of which applications cannot be downloaded. MAM should also allow employees to separate business applications from consumer applications.

MIM, sometimes referred to as mobile content management, refers to how mobile devices access and share information and data. EMM software should be able to set different levels of data access for different employees. Also, EMM software often includes file-sharing programs that allow employees to easily share documents and e-mails.

Aside from MDM, MAM and MIM, quality for EMM software is also affected by its security. If mobile devices are lost or stolen, outside parties can gain access to sensitive company data. Security options for EMM software include password and data loss protection, data restoration, authentication, encryption and remote wipe technology.

Supply Chain & Vendors

Supply Chain Dynamics

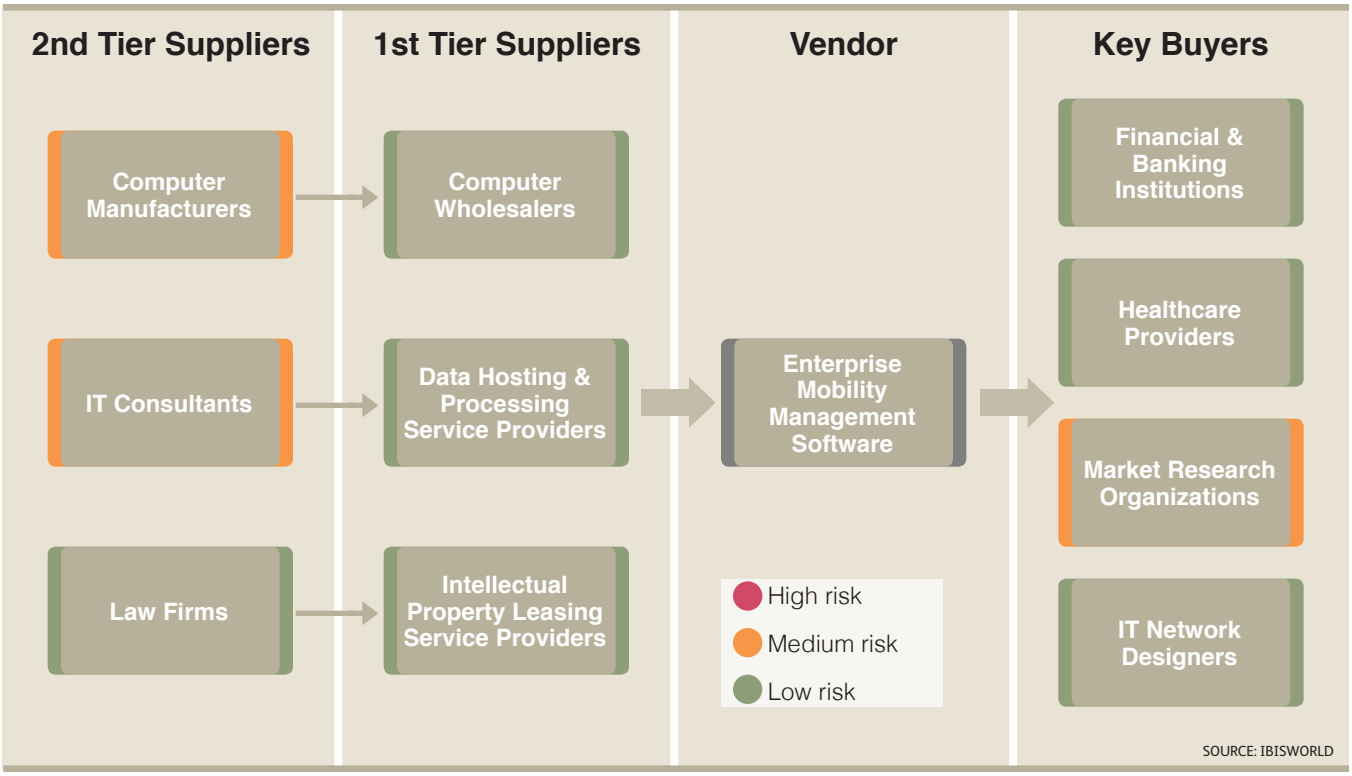
Supply Chain Risk: LOW

Average Vendor Risk: LOW

Supply Chain Risk

The upstream supply chain poses minimal risks to suppliers of EMM software. EMM software vendors primarily rely on suppliers of computers, IT consulting and intellectual property licensing services. These upstream markets are largely saturated and, as such, are highly competitive. Strong competition among key first-tier suppliers in turn gives EMM software vendors leverage in negotiations and reduces the risk of input price shocks.

The biggest threat in the upstream supply chain comes from computer manufacturers and IT consultants, which are both second-tier suppliers. Although high competition among computer manufacturers keeps computer prices in check, it also threatens vendor continuity because competition may put certain vendors out of business. The loss of a computer manufacturer could cause disruptions in computer wholesalers' supply chains. Fortunately, because computer wholesalers source their products from a variety of vendors, they are able to mitigate the impact of supplier discontinuity on their operations. Thus, EMM suppliers are shielded from the majority of the risk that computer manufacturer discontinuity poses. In addition, strong demand for IT consultants has created a deficit of qualified IT personnel. This deficit has subjected vendors of data hosting and processing services to continual wage hikes. Because competition prevents suppliers of data hosting and processing services from raising prices, rising wage costs put them at some risk of discontinuity. EMM software publishers, however, have a plethora of these upstream vendors available to them and can easily replace a vendor that exits the market. Therefore, the risk that IT consultant deficits pose on the supply chain is also minimal.



Supply Chain & Vendors

Supply Chain Dynamics continued

EMM software vendors also face minimal risk from buyers. EMM software vendors cater to a wide variety of buyers. As a result, loss of demand from one buyer group is generally replenished by rising demand from another. Key buyers of EMM software include financial service companies and healthcare providers. These buyers are heavily backed by federal and state governments and therefore have minimal risk of default. Moreover, IT network designers, another key buyer, are in such high demand that they too have a minimal risk of discontinuity. Although key buyers in market research organizations have some risk of discontinuity due to the relatively discretionary nature of their services, their threat to EMM software vendors is tempered by the diverse range and low risk of other key buyers. The overall minimal risk from downstream demand benefits buyers by reducing the likelihood of vendor bankruptcy.

Geographic Locations

Because software can be uploaded to a buyer's server remotely for a marginal cost, geographic barriers in the EMM software market are minimal. Furthermore, because EMM software relies primarily on inputs that can be provided virtually (e.g. software licensing as well as data hosting and processing services), EMM software vendors are generally not concerned with the locations of other vendors in their supply chain. Instead, EMM software publishers generally gravitate to areas that afford them access to qualified IT professionals.

Suppliers are heavily concentrated in the West (20.9%), Southeast (21.7%), Mid-Atlantic (16.5%) and Great Lakes (12.3%) regions of the United States. In 2016, an estimated 15.1% of EMM software publishers are located in California. California is home to Silicon Valley, an area with a high concentration of technology companies and universities that specialize in computer science, where qualified human capital is readily available. California is also the most populous state, affording suppliers further opportunity to recruit IT professionals. Buyers receive few additional benefits from being located in proximity to their EMM software suppliers, however. Thus, geographic location has a minimal effect on buyers.

Furthermore, low geographic barriers in the EMM software market facilitate globalization. Because foreign companies can distribute their software digitally, they are not required to invest in facilities overseas to reduce distribution time and costs. Hence, foreign companies can provide software to buyers abroad just as easily as they can to domestic buyers. Although globalization has increased demand for US suppliers, it has also introduced a variety of EMM software programs from foreign vendors into the market. These opposing forces have largely offset one another. In turn, globalization has also had a negligible effect on buyer power.

Imports

International trade in EMM software only reflects the value of physical copies of software that have been imported. The digital distribution of software has eliminated the need to import and export physical copies of software. Although there is a negligible amount of EMM software imported into the United States, there has been a gradual rise in penetration from foreign companies into the US market. For example, SAP SE, a company based in Germany, has gained substantial traction in the US market. Although US buyers' trust in domestic software publishers has somewhat

Supply Chain & Vendors

Supply Chain Dynamics continued

slowed foreign penetration during the three years to 2016, IBISWorld expects that trust in overseas vendors will grow in the United States in the three years to 2019. Supply within the US EMM software market is, consequently, expected to rise, which will enhance buyer leverage.

Competitive Environment

Market Share Concentration **MEDIUM**

Market Share Concentration

In 2016, IBISWorld estimates that there are about 120 EMM suppliers in the United States. Collectively, the top four firms account for an estimated 36.1% of the market, indicating a moderate level of concentration. EMM software is complex and requires extensive experience in computer programming to create. Hence, barriers to entry are relatively high, which slows supplier entry into the market and allows top-tier suppliers to acquire sizable market shares. Moreover, switching costs are high. EMM software is deeply integrated into the buyer's business, making it difficult for existing users to switch vendors. As a result, suppliers can more easily retain existing customers. Unfortunately, the current level of concentration hinders buyers' ability to negotiate with market leaders somewhat, lowering buyer power.

In addition, merger and acquisition activity in the EMM software market has increased, causing market share concentration to rise in the past three years. Although new suppliers have entered the market, acquisitions have allowed top-tier suppliers to increase their market share. Historically, EMM software was specialized for certain areas such as data, security, content, analytics or applications, and buyers took a best-of-breed approach to procurement. As mobile device adoption has grown and processing capabilities have become more powerful, large companies have started requiring unified and integrated EMM software solutions that can manage all their mobile device needs instead of using multiple software components. As a result, EMM software providers have been aggressive in acquiring other companies and integrating their technologies. The end goal of these acquisitions is to transition from basic MDM software to an EMM software platform that can serve all of the buyer's mobile networking needs. Although new companies are expected to continue entering the market, their entrance is not anticipated to fully offset the impact of merger and acquisition activity. Overall, trends in the market limit the range of providers buyers can choose from, harming buyer power.

Vendor Company Types

EMM suppliers include multiline software publishers and dedicated EMM specialists; there are about 120 suppliers in the market overall. The largest multiline publishers generate a larger share of market revenue, but they make up a smaller percentage of total suppliers. On the other hand, the largest dedicated EMM specialists each control less than 5.0% of the market by revenue.

Multiline software publishers: IBISWorld estimates that about 90 multiline software publishers provide EMM software. Multiline software publishers such as Microsoft and SAP are large public companies that generate revenue from a wide variety of software products. EMM software forms a small percentage of their overall revenue. These suppliers are the largest players in the market, have very stable financials and are ideal for long-term relationships. Large businesses seeking solutions for EMM software for a wide variety of devices should strongly consider these

Supply Chain & Vendors

Competitive Environment continued

providers. Multiline software publishers also ensure that the EMM software is integrated properly with other software products and the buyer's mobile devices. In addition, these suppliers can offer package deals wherein EMM software is discounted with the purchase of some of their other software products. However, EMM software forms a very small percentage of these firms' total revenue; this makes them reluctant to offer discounts, which limits buyer negotiation power.

EMM software specialists: In 2016, IBISWorld estimates that about 30 EMM software specialists operate in the United States. Those such as SOTI and Mobile Iron generate the majority of their revenue from EMM software. These providers tend to be small or midsize private companies that have built their EMM software from scratch. Thus, they are very innovative and have deep technical expertise. These suppliers have some of the most powerful EMM software features in the market. Pricing is also cheaper with these companies. However, products from these providers might not be compatible with all mobile devices and operating systems on the market. Additionally, their software might not be as comprehensive as multiline software publishers. As smaller companies, EMM software providers are not the most stable, and buyers should be aware of this before they form a long-term relationship with these providers. Buyers should also be aware that EMM software providers might only offer SaaS solutions, which may make them an unviable option for those seeking customized on-premises implementation.

Supplier diversity: Suppliers in the market for EMM software are very

Vendor Statistics – Enterprise Mobility Management Software

	US Product Market Share (%)	Market Share Performance (3-yr trend)	Total Revenue ($m)[1]	Profit Margin (%)	Financial Risk Level[2]
SAP SE	15-20	Decreasing	23,074	20.4	Low
Microsoft Corporation	5-10	Steady	85,320	23.7	Low
VMWare Inc.	5-10	Increasing	6,571	18.2	Low
MobileIron Inc.	5-10	Increasing	149	-55.8	High
Good Technology	5-10	Increasing	100-250	N/A	N/A
International Business Machines Corp.	<5	Decreasing	81,741	19.2	Low
Hewlett Packard Enterprise Company	<5	Steady	50,123	8.3	Medium
Symantec Corporation	<5	Decreasing	3,600	12.7	High
Sophos	<5	Steady	478	-6.8	Medium
SOTI	<5	Increasing	<100	N/A	N/A

1: Revenue refers to the latest financial year for which data is available. Private company revenue is expressed as a range.
2: Financial Risk Level is based on the Altman Z-Score, which uses a formula to predict a company's risk of bankruptcy. See Glossary for more details.

SOURCE: IBISWorld

Supply Chain & Vendors

Competitive Environment continued

diverse. The percentages of women-, minority- and veteran-owned businesses in this market are all substantially higher than the information sector and the overall economy. While only a limited number of suppliers operate within the market, diversity among them is high, allowing buyers looking to fulfill diversity requirements to easily locate a supplier in these categories.

Supplier Diversity

Ownership Category	This Market (%)	Overall Sector (%)	Overall Economy (%)
Women	38.9	15.3	19.4
Minority	26.4	11.1	17.5
Veteran	8.3	6.1	7.5

Ownership is defined as owning at least 51 percent of a firm, which is the definition used by the Small Business Administration for government procurement programs.

SOURCE: IBISWorld and US Census Bureau

Market Profitability

Profit Level: HIGH

Profit Trend: FALLING

In 2016, the average profit margin for EMM software is high, accounting for about 24.5% of revenue. The immense value that EMM software provides to buyers allows suppliers to apply a generous markup to their prices. Larger suppliers achieve the highest profit margins because they are able to leverage their brand name reputation when pricing their software. When margins are high, suppliers can better absorb price shocks in the supply chain, limiting the risk of significant fluctuations in the price of EMM software. Furthermore, high profit margins give suppliers more room to lower prices without compromising profitability, making them more open to negotiation. Lastly, suppliers with high profit margins are less vulnerable to bankruptcy, which makes long-term contracts a more viable strategy for boosting buyer power. In addition to high profit, low risk from upstream suppliers and key buyers helps keep overall vendor risk low. As a result, buyers face little threat of abrupt price increases or vendor discontinuity.

Unfortunately for buyers, profit margins have gradually been declining. During the three years to 2016, advertising costs have risen and market competition has curbed price growth. Consequently, overhead cost growth has outpaced sales growth, causing profit margins to narrow. Due to falling profitability, suppliers are limiting the extent to which they are willing to negotiate on price, which is detracting from buyer power.

Switching Costs

Switching Costs: HIGH

Switching costs are high on average for EMM software because the software is deeply integrated with buyers' mobile devices, software and operations as a whole. Uninstalling existing EMM software is very disruptive for a buyer's business. Operations may have to shut down entirely while new software is being installed and customized, a process that could take months. If the buyer does not have other security measures in place to protect data on mobile devices, the buyer will have very high data security risks while changing providers. Switching EMM software is a very complex process that will require significant time and IT expertise. Buyers may need to hire dedicated

Supply Chain & Vendors

Switching Costs continued

IT consultants or installation services from their new provider.

High switching costs lower buyer negotiating power because buyers may have difficulty seeking lower prices by threatening to switch to another provider. Additionally, if providers raise their prices and fail to deliver quality products, buyers will have difficulty taking appropriate action because they may be locked in. As a result, buyers should be extremely selective and careful in choosing a provider and assume that they will be using this EMM software permanently. In addition to evaluating current needs, buyers should also consider future mobile device and application needs.

The amount of switching costs that buyers face is also largely dependent upon the pricing model under which they negotiate. A perpetual licensing model will often require buyers to pay for their software upfront; this investment is forfeited when switching vendors. Alternatively, a subscription-based model allows buyers to pay monthly and, as such, requires less upfront investment. This feature reduces the amount the buyer must forfeit when switching vendors and, in turn, lowers their switching costs. As cloud computing technologies are developed, subscription-based billing structures are becoming increasingly prevalent, thereby lowering switching costs in the market.

Purchasing Process

Buying Basics

Buying Lead Time: LONG

Buying Lead Time

Evaluating, purchasing and installing software is a complex process that will have deep operational and strategic consequences for buyers. EMM software is a critical component in creating an effective and functional infrastructure for mobile devices in large organizations. As such, buying lead times are very long, ranging between three to six months depending on the method of the deployment (on-premise or hosted), the number of mobile devices, the type of mobile devices, the applications used by the buyer and the buyer's existing network infrastructure and software products.

After the evaluation and selection process, buyers will install and implement the EMM software. The installation process will be shorter if the buyer uses a hosted or SaaS solution. However, configuration, integration and ensuring compatibility with all the buyer's mobile devices will still take a few months. Buying lead times can be shortened if the buyer hires IT consultants or installation services from their provider. After the software is purchased and installed, the buyer can continue to have ongoing upgrade, support and maintenance services.

Selection Process

Buyers and suppliers in the EMM software market typically have a collaborative relationship. This type of relationship is commonly found in markets where the product is considered high value to the buyer and also has increased market risk. EMM software is considered high value because it is integral to many buyers' operations. Additionally, its value is bolstered by its lack of available substitutes, high switching costs, long buying lead time and moderate total cost of ownership. High market risk for EMM software is derived from moderate market share concentration, and the moderate rate of regulatory change in the market. Due to these factors, buyers should consider every suitable supplier carefully before choosing a supplier and deploying their software.

In collaborative relationships, buyers and suppliers must work together to reach a mutually beneficial deal. Unfortunately, suppliers generally have greater leverage in collaborative relationships because of the high value and high risk nature of the product, hurting buyer power.

Buying-Decision Scorecard

The Buying-Decision Scorecard outlines the key criteria a buyer should consider when purchasing this good or service. When weighing the importance of each factor, we assume that a buyer has narrowed down potential suppliers to those that meet the technical and price criteria specified in the RFP. The criteria and weights assigned below can be used as guidelines to help further differentiate already qualified vendors.

Purchasing Process

Buying Basics continued

Buying-Decision Scorecard

Factor	Weight (%)	Description
Technical Factors	**75.0**	
Mobile Device Management	20.0	MDM is the core function of EMM software. Buyers should ask about how the software can add and remove devices as well as track their status and location.
Mobile Application Management	20.0	Employees will typically use many different applications on their mobile devices. MAM will allow EMM software to distribute, track and control these applications.
Mobile Information Management	10.0	MIM allows employees to access and share corporate data and information using their mobile phones.
Compatibility	10.0	EMM software compatible with a variety of devices and operating systems will give greater flexibility to buyers.
Security	10.0	Mobile devices present a great risk of outside parties gaining access to sensitive company data. EMM software should have adequate security measures in place to prevent this from happening.
Support & Maintenance	5.0	Support and maintenance services will help ensure that the EMM software works as desired after it is installed.
Cost	**25.0**	
Price	25.0	For large organizations, the price for EMM software can be substantial. However, the price of EMM software is less important than technical factors that can affect the quality of EMM software.
Total	**100.0**	

Key RFP Elements

Specific information to impart to suppliers in the RFP includes:

- The number of devices that will be managed by the software
- The type of devices and operating systems used by the buyer
- The applications used by the buyer
- Estimates of the volume of data managed by the software
- File sharing capabilities desired by the buyer
- The network infrastructure used to provide internet connectivity for mobile devices
- The telecommunication carriers used by the buyer
- The level of access that will be granted to different employees
- Other software programs (security, content management, infrastructure) used by the buyer

Purchasing Process

Key RFP Elements continued

Specific information to gather from suppliers in the RFP includes:

- The operating systems and platforms that can be used by the EMM software
- The mobile devices that can be used by the EMM software
- The security options (i.e. data encryption, remote access, authentication, data backup) offered
- How the EMM software adds or removes mobile devices
- How the EMM software adds or removes applications
- The software's ability to separate personal data and applications from corporate data and applications

Standard Elements in an RFP

Overview & Scope	This tells the vendor about your company, why your company needs this product and what you hope to achieve from its purchase. Deadlines for steps in the procurement process should be clearly defined in the section.
Vendor Qualification	This section details the features a winning company must possess, such financial size, scope of work completed or geographical reach. This section will also explain the criteria used in evaluating the bid and its relative importance in your scorecard. This section might disqualify some companies, such as suppliers to your competitors.
Technical Specifications	This section details the technical and functional specifications of the product you want. The more detail provided, the shorter the procurement cycle since all vendors are bidding to the same, exact specifications. Further, if all needs are specified there is less chance of additional costs will surface down the road. This section will also look at service level agreement needs.
Financial Factors	This section is where vendor quotes prices for the product or service being supplied. This section should specify cost breakdowns, billing frequency (with specific dates, time periods), billing methods (mode of payment, including currency) and taxes.
Legal Framework	This section should reference the legal jurisdiction in the event of a dispute, methods for arbitration and contract termination mechanisms. Nondisclosure agreements are also part of this section, as are escrow agreements (mainly in the event of shared proprietary knowledge).

Negotiation Questions

Issue	Questions
Mobile Device Management: The primary function of EMM software is to activate, integrate, monitor and manage mobile devices.	• How quickly can your software be upgraded to manage new smartphone or tablet devices? • Can your software handle different operating systems at the same time? • What other devices besides tablets and smartphones can be managed by your software? • How does your software integrate with existing network infrastructure?
Mobile Application Management: In addition to the physical devices, EMM software should also manage the applications used on the devices.	• Can your software create a blacklist of applications that cannot be accessed or downloaded? • Can your software purchase or download applications in bulk? • How does your software manage and track employee usage of specific applications? • Can you restrict usage or access to specific applications for specific groups of users?
Mobile Information Management (MIM): MIM enables employees to access corporate data through their mobile devices, enabling employees to perform work on the go.	• Does your software allow employees to easily share content, data and files? • How does your software integrate with other software programs used to store and manage company data and resources? • Can your software create different levels of information and data access for different groups of employees? • Does your software have containerization or workspace management tools to separate personal and corporate data and content?
Compatibility: Employees are increasingly using their own devices at work. Buyers should ensure the provider's software is compatible with a variety of devices and operating systems.	• Which mobile operating systems can be used with your software? • Which tablet and phone brands are compatible with your software? • How are your relations with other software publishers? • If a mobile device cannot be used with your software, how quickly can you upgrade your software to enable compatibility?
Security: EMM software should have robust security options to prevent outside parties from getting access to sensitive company data, especially if mobile devices are lost or stolen.	• What security options does your software provide? Does it include authentication, encryption and password protections? • How does your software back up or restore deleted data? • Can your software remotely access mobile phones? • Do you offer the ability to track the physical location of mobile devices? • How does your EMM software integrate with other monitoring and security platforms and software?
Maintenance, Upgrade and Support Services: EMM software is very complex to maintain and manage; buyers will typically require additional services from their provider after installation.	• How often do you perform upgrades on or add features to your software? • What is the schedule and availability of your IT consultants and support staff? • Can you send support staff on site to help us with installation? • What long-term contracts are available for your maintenance, upgrade and support services?
Deployment Method: Most EMM software is installed on-premise on the buyer's computers. However, many providers are also offering hosted solutions that are accessed through the internet.	• If an on-premise solution is used, what additional infrastructure is required? • What is the minimum internet speed used to access hosted EMM software solutions? • How do your on-premise software costs compare with your hosted or SaaS software costs? • How reliable is your software? What is the average uptime for accessing your EMM software?

Buyer Power Score Components

Price Trend

Factor	Definition	Weight	Score
Recent Price		40%	3
Neutral	Compound annual growth rate in benchmark price over the past three years 1.5-3.0%		
Forecast Price		60%	3
Neutral	Compound annual growth rate in benchmark price in the next three years 1.5-3.0%		
Weighted Score		**50%**	**3.0**

Market Structure

Factor	Definition	Weight	Score
Availability of Substitutes		35%	1
Low	There are few viable substitutes for this product/service		
Market Share Concentration		25%	3
Medium	The top four suppliers of this product/service have 30.1-49.9% market share		
Product Specialization		25%	1
High	The product/service is assessed as having a high level of specialization		
Switching Costs		15%	1
High	The cost of switching from this product and/or supplier is assessed as high		
Weighted Score		**20%**	**1.5**

Market Risk

Factor	Definition	Weight	Score
Price Driver Volatility		25%	3
Medium	Average absolute difference in percentage change of external drivers 2.0-3.4%		
Recent Price Volatility		25%	4
Medium-Low	Average absolute difference in % change in price over last 3 years 1.0-1.9%		
Vendor Financial Risk		25%	5
Low	The average level of financial risk for product/service vendors is assessed as low		
Supply Chain Risk		25%	5
Low	The average level of product/service supply chain risk is assessed as low		
Weighted Score		**30%**	**4.3**

Overall Buyer Power Score 3.1

IBISWorld's Buyer Power Score is a calculation based on weighted quantitative and qualitative factors that measure a buyers' ability to negotiate lower prices and favorable contract terms. The higher the Buyer Power Score, the greater the average buyer's negotiating strength for this product. The overall score is composed of three components:
1) **Price Trend:** compares this product's average recent and forecast price change to the economy-wide inflation rate
2) **Market Structure:** assesses the availability of alternatives and ease of purchasing in this product's marketplace
3) **Market Risk:** measures elements of volatility and risk impacting a buyer's confidence in making long-terms deals with suppliers of this product.

Jargon & Glossary

Jargon

Mobile Device Management The management and tracking of mobile devices.

Mobile Application Management The delivery and management of applications and software installed on mobile devices.

Mobile Information Management Features that control a mobile device's ability to access and distribute company information and data.

Bring Your Own Device A trend where employees use their own personal mobile devices to perform business activities.

Remote Access The ability to access a mobile device without physically being nearby.

Best-of-Breed Approach An approach to network design that incorporates the best software of its type for each function rather than selecting an integrated software package from a single vendor.

Containerization A solution that allows employees to keep their personal data and applications separate from company data and applications on personal devices.

Glossary

HS The Harmonized Commodity Description and Coding System is maintained by the World Customs Organization as a standardized system of names and numbers for classifying traded products.

Life Cycle All products and services go through periods of growth, maturity and decline. IBISWorld determines a life cycle by considering factors such as pricing trends, the level and speed of product or service change, the extent of a product's distribution and the maturity of marketing trends.

Market Share Concentration Determined by the market share of the top four vendors for a given product or service: high is when the top four vendors account for more than 50.0% of the product or service market share, medium is from 30.0% to 50.0%, and low is less than 30.0%.

NAICS The North American Industry Classifications System is the standard by which industries (not products) in the United States, Canada and Mexico are classified.

Price Driver Volatility Level Determined by the average absolute difference in the percentage change of input cost items and external demand drivers over the past three years: high is 3.5% or greater for all drivers, medium is from 2.0% to 3.4% for all drivers, and low is 1.9% or less for all drivers.

Price Range The difference between the upper and lower price bounds divided by the benchmark price: wide is greater than 50.0%, medium is from 25.0% to 50.0%, and narrow is less than 25.0%.

Price Volatility Level Determined by the average absolute difference in the percentage change of the benchmark price over the past three years: high is 3.5% or greater, medium is from 2.0% to 3.4%, and low is 1.9% or less.

Producer Price Index (PPI) This index represents the change in the amount that producers receive for their products or services, as opposed to the prices that consumers pay for them.

Profit IBISWorld uses earnings before interest and tax (EBIT) as an indicator of a company's profitability. It is calculated as revenue minus expenses, excluding interest and tax.

Profit Level Determined by the average profitability of the industry in which a product or service vendor operates, compared to the average profit margin for all industries in the US. There are around 700 industries in the US classified using the NAICS taxonomy (see NAICS).

Total Cost of Ownership Level Determined by the total cost of ownership as a percentage of the benchmark purchase price per year: high is when the total cost of ownership is greater than 100.0% of the benchmark purchase price per year, medium is from 50.0% to 100.0%, and low is less than 50.0%.

UNSPSC Coding for each report title is based primarily on the United Nations Standard Products & Services Code. The code is a hierarchical classification codeset of expenditure items.

Wages The gross total wages and salaries of all employees in the industry. The cost of benefits is also included in this figure.

Z-Score The Altman Z-score formula is used to help predict a company's chances of going bankrupt within the next two years. The Z-score uses multiple corporate income and balance sheet values to measure the financial health of a company. Z-scores above 2.9 are defined as having a low financial risk level; scores between 1.23-2.9 are at a medium risk level and scores below 1.23 are a high financial risk level.

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Who is IBISWorld?

We are strategists, analysts and researchers. We provide answers to information-hungry, time-poor businesses. Our goal is to provide real-world answers that matter to your business in our Procurement and Industry report collections. When tough business decisions need to be made, our suite of products gives you deeply researched answers quickly.

Our procurement and strategic sourcing research helps clients engage and negotiate effectively with suppliers, internal stakeholders and C-level executives. Our insight on price trends, major suppliers and supply chain risk helps clients better manage the entire sourcing process.

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