

## Update

## Buy

Target Price: EUR 4.71

## Funkwerk AG

## Reorganization creates basis for profitable growth

Industry: Technologie  
Country: Germany  
Reuters: FEWG.DE  
WKN: 575 314  
Website: funkwerk.com

Current Price: 3,99  
High: 6,91  
Low: 2,15  
Price 52W.: 6,91  
Market Cap. (Mill. EUR): 32,3  
No. Of Shares (in Mill.): 8,1

## Shareholders

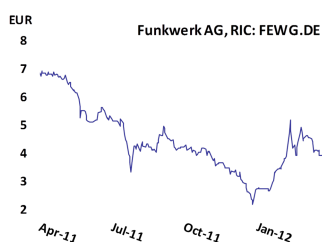
Free Float: 47,17%  
HÖRMANN Funkwerk Holding: 52,83%

## Performance

4 Weeks: -13,2%  
13 Weeks: 47,3%  
26 Weeks: -6,5%  
52 Weeks: -42,2%  
YTD: 36,7%

## Dividend

	EUR/Share	in %
2009	0,00	0%
2010	0,00	0%
2011e	0,00	0%
2012e	0,00	0%
2013e	0,00	0%



- Sales in 2011 came in below our expectation and company guidance. The company stated that the market for communication and information systems remained difficult mainly due to contract delays and longer project periods in the public sector. Also investments by Deutsche Bahn came in below management's expectations. EBIT before non-operating charges amounted to €-3.2m.
- The largest of all segments is TCC and is also the one with the most successful performance in 2011. Revenues for the TCC segment adjusted for the undergone and planned unit increased slightly from €83.6m to €86m. EBIT before charges increased from €3.6m to €4.5m. Especially the division passenger information performed very well. In the segment SC sales decreased slightly. One reason is its high dependence on public spending. Despite substantial restructuring measures, the unadjusted EBIT increased considerable due to a large one-time charges resulting from the Algerian operation in the prior year. Mainly because of the result of the planned unit sale within the segment AC revenues decreased by 18%. Framework orders for new product developments triggered the need for the investment in a new product platform. The connected upfront payments lead to a negative operating result of €-2.7m before impairment and restructuring charges.
- Funkwerk positioned itself in growth segments in areas of its core competencies where it enjoys a technology and market lead. The centralization of business activities will lead to greater efficiency. We view the EU wide modernization of railways, the megatrend of inside car usage of smart consumer electronics, as well as the company's international expansion as the greatest value drivers for Funkwerk. In the short term the reorganization and international expansion resembles a challenge. In the medium term we expect Funkwerk to attain higher revenue growth and margins.
- We lowered our outlook for the upcoming year mainly accounting for reorganization in line with management expectations. As a result of the change in our estimates our DCF target price lowered to €4.52. Our peer group analysis leads to a fair value of €6.46. We give the DCF valuation a weight of 90% and the peer group valuation a weight of 10%. This leads to a final target price of €4.71. Applying our rating methodology and comparing the target price to the current stock price, leads to the recommendation "BUY".

EUR m	2012e	2013e	2014e	2015e	2016e	2017e
Revenues	166	180	194	207	220	231
EBITDA	8	11	17	20	24	27
EBIT	0	4	9	12	15	17
Net Income	0	2	6	8	10	12
EPS	-0,1	0,3	0,7	1,0	1,2	1,5
BVPS	6,0	6,3	7,0	8,0	9,2	10,7
CFPS	-0,3	1,4	1,5	1,9	2,2	2,5
RoA	0%	2%	4%	5%	6%	7%
RoE	0%	2%	4%	5%	6%	7%
EBIT Margin	0%	2%	4%	6%	6%	7%

Dr. Norbert Kalliwoda  
Phone: +49 69 97 20 58 53  
Email: nk@kalliwoda.com  
www.kalliwoda.com

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# 1 Company Profile

Funkwerk AG is a mid-sized technology company specializing in solution-oriented information, communications and security systems. The company's products are based on the state-of-the-art principals of radio and communication technology and data processing to improve security and comfort and help reduce customer costs. The mission is to maintain a high degree of flexibility in reacting to customer requests coupled with leading technological expertise. The focus is on high-end solution and services. The services of Funkwerk AG are structured into the three divisions that are subdivided into further business units.

Business Segments and Units				
Traffic & Control Communication (TCC)		Security Communication (SC)		Automotive Communication (AC)
Infrastructure	Rolling Stock	Video Security Solutions	Security	Automotive
Product Areas / Entities / Core Products (Market Ranking)				
<b>Stationary Communication Systems</b> <i>Hörmann Funkwerk Kölleda GmbH</i> <ul style="list-style-type: none"> <li>• DIKOS 310: voice operation management system (#1 GER, #3 EU)</li> </ul>	<b>Mobile radio systems</b> <i>Hörmann Funkwerk Kölleda GmbH</i> <ul style="list-style-type: none"> <li>• Inside train radio systems based on GSM-R standard unique feature is SIL2 approval; (#3 EU)</li> <li>• Handhelds for usage in inside trains and shunting operations, focX voice and data (#1 EU @ 70%)</li> </ul>	<b>Video Systems</b> <i>Funkwerk plettac electronic GmbH</i> <ul style="list-style-type: none"> <li>• Production of high end cameras, pan-tilt heads and domes (Top 3 supplier)</li> <li>• Monitor solutions</li> </ul>	<b>Personal Security</b> <i>Funkwerk Security Communications GmbH</i> <ul style="list-style-type: none"> <li>• TSS &amp; DSS: Security communication platforms on TETRA &amp; DECT standard: e.g. functions of localization, alarm, video feed, documentation; easily integratable</li> <li>• OCP radio messaging system</li> </ul>	<b>Vehicle Equipment</b> <i>Funkwerk Dabendorf GmbH</i> <ul style="list-style-type: none"> <li>• High frequency technology: compensor and combiner (#1 world)</li> <li>• Mobile phone into vehicle: Wireless secure operation and charging via universal phonebox over car antenna (#1 GER);</li> <li>• Communication products: Vehicle WLAN router; eCall unit; Connectivity Unit for CE devices</li> </ul>
<b>Management Systems</b> <i>Funkwerk Information Technologies GmbH</i> <ul style="list-style-type: none"> <li>• Allister: Signaling technology for interlocking systems (best price and quality)</li> <li>• Employee training systems for operation control and signaling technology (Top 3)</li> </ul>		<b>Property Protection</b> <i>Funkwerk plettac electronic GmbH</i> <ul style="list-style-type: none"> <li>• Management system for video monitoring and surveillance (#1GER)</li> <li>• Video image analysis:               <ul style="list-style-type: none"> <li>○ ARGOSCAN hard shoulder release for less traffic jams</li> <li>○ Traffic analysis</li> <li>○ Privacy masking</li> <li>○ Motion detection &amp; object analysis</li> </ul> </li> <li>• Consulting, projecting, training, system support and maintenance</li> </ul>	<b>Radio Equipment for Security Functions</b> <i>Funkwerk Security Communications GmbH</i> <ul style="list-style-type: none"> <li>• Specialized DECT and TETRA handsets: Explosion proof e.g. ATEX certified, personal security functions (50% of GER penal facilities), medical or office reliable communication (Top 3 in GER)</li> <li>• OEM for DECT devices</li> </ul>	<b>Telematics</b> <i>Funkwerk eurotelematik GmbH</i> <ul style="list-style-type: none"> <li>• Fleet management systems also web based and satellige system development</li> </ul>
<b>Information Systems</b> <i>Funkwerk Information Technologies Karlsruhe GmbH &amp; Microsyst Systemelectronic GmbH</i> <ul style="list-style-type: none"> <li>• Customer information display, timetable &amp; road &amp; route (Top 3)</li> </ul>				
Strategic Market Positioning				
<ul style="list-style-type: none"> <li>• Integrated system supplier for rail operators and other system suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• Complete system provider for rail operators and train manufacturers</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated system supplier</li> <li>• Specific sector solutions</li> </ul>	<ul style="list-style-type: none"> <li>• Distribution network of 30 partners in 13 countries</li> </ul>	<ul style="list-style-type: none"> <li>• Tier 1 system supplier to production lines via close partnerships</li> <li>• Development Partners</li> </ul>
Growth Drivers				
<ul style="list-style-type: none"> <li>• Increasing use of software solution for information</li> <li>• Increasing traffic &amp; role of ressource efficient transportation</li> <li>• Interlocking systems reach age limit 31000 in Germany2012 (SIL2)</li> </ul>	<ul style="list-style-type: none"> <li>• Shunting operations in Western EU</li> <li>• GSM-R standard rollout in EU of about 150t km</li> <li>• Expanding capability range of handheld devices and device systems</li> </ul>	<ul style="list-style-type: none"> <li>• Network-based video technology and usage to control ressources and efficiency in processes</li> <li>• Videoanalytic sensoric for smart user support</li> <li>• Expansion of service, consulting business and network technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Globally steadily increasing security requirements (3 to 10% annually)</li> <li>• Expanding customer base of handheld devices</li> </ul>	<ul style="list-style-type: none"> <li>• Growing # of CE devices</li> <li>• Growing use of CE devices in the car; electronic interior becomes a purchasing argument when buying a car</li> </ul>
Customer Segments				
<ul style="list-style-type: none"> <li>• Public Rail and Transport Operators</li> <li>• Rail Transport / Manufacturers</li> <li>• Infrastructure Operators (e.g. energy, fire departments)</li> </ul>		<ul style="list-style-type: none"> <li>• Companies</li> <li>• Institutions &amp; Authorities</li> <li>• Energy Suppliers</li> </ul>		<ul style="list-style-type: none"> <li>• Car (Premium) and Lorry Manufacturers</li> <li>• Transport Companies</li> </ul>

## 2 SWOT Analysis

Strength	Weaknesses
<ul style="list-style-type: none"> <li>• <b>The high expertise and experience</b> in the areas of high frequency technology resembles a competitive advantage and entry barrier.</li> <li>• <b>Funkwerk is a specialist with decades of experience in niche markets</b> such as railway information systems, handhelds for personal security and mobile phone car integration. Thereby the company is able to offer innovative, unique customized solutions for various interfaces and modules.</li> <li>• <b>Innovation</b> is a core company focus with the R&amp;D budget amounting to 10% of revenues and more than 1/5 of all employees being active in the area.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>A high inventory level</b> due to warranty replacement contracts up to ten years binds capital and could result in future impairment losses.</li> <li>• <b>A high sector concentration</b> in the segments TCC and SC and their dependence on public sector increases business risk.</li> <li>• <b>A high individual customer concentration</b>, as one customer accounts for more than 10% of revenue and several others come close to 10%, increases business risk.</li> </ul>
Opportunities	Threads
<ul style="list-style-type: none"> <li>• <b>Product upgrades through higher level certification and expanding capabilities</b>, e.g. Allister SIL 2, TETRA and DECT devices, HD cameras, strengthen position and open new markets.</li> <li>• <b>Railway infrastructure modernization</b> like the GSM-R standard rollout in EU and the modernization of aging interlocking systems means that railway operators need to upgrade their stationary and mobile train systems. We view the company's position in these areas as excellent to profit from this trend.</li> <li>• <b>Megatrends</b> like increasing use of CE devices in the car, increasing global security levels, and use of network based video to make processes more efficient spurs demand for Funkwerk products and solutions.</li> <li>• <b>International expansion</b> leads to a growth in revenues, larger margins through scale effects and diversification benefits with respect to the customer base. New risk in the form of tax, achieving technology norms, law and foreign exchange provide challenges.</li> <li>• <b>The orientation as system solution provider</b> is in our view an attractive strategy as available knowledge can be used to move up in the value chain, while at the same time the dependence on technology innovations decreases.</li> <li>• <b>Reorganization and outsourcing</b> should unleash synergies, increase efficiency and ultimately lead to higher margins.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>The Risk of losing technology leadership</b> is generally high in a young communications sector where technology changes fast and the pressure is high to produce consistent innovations and bring them to the market in a timely manner at an adequate pricing level.</li> <li>• <b>A Supply shortage</b>, due to short lead times of the cyclical electronic component industry and dynamic product cycles, could evolve, if resources are not available in the case of unexpected developments. This could lead to missed opportunities, a drop in margins facing higher prices or even losing technology leadership if a competitor manages the supply shortage in a better manner.</li> <li>• <b>Investments in the Algerian project</b> are not likely to be retrieved.</li> </ul>

## 3 Current Developments

### 3.1 Reorganization

In 2011 Funkwerk AG performed a reorganization of its company structure from a pure management holding to a corporation where central business functions of all segments are now managed by central units. Within its business segments the company focuses on areas where its core competencies give it a technology lead in markets with strong margins and growth prospects. As a result of the reorganization Funkwerk AG sold its enterprise communication segment (€28m sales; 140 employees) including subsidiaries, as well as the unit Alpha Meß-Steuer-Regeltechnik GmbH (TCC; €17m sales; 120 employees). It is in the process of selling Funkwerk Avionics GmbH (AC; €3,3m sales; 24 employees) and the sports unit of the Funkwerk Information Technologies Karlsfeld GmbH (TCC; €1,5m sales). Further sales may follow.

Funkwerk AG employed a platform strategy centralizing business activities. Bundling purchase activities will increase volume and lower price. Centralized financing activities will give the corporation a better bargaining position against credit institutions.

Production capacity will be shifted among facilities across all business units according to needs resulting in a higher utilization of facilities. The adaption of a lean management organization will be subsequently inaugurated for large volume production processes and ultimately lead to faster production and running times as well as lower inventory. The use of technology and product platforms, as well as the introduction of competence centers for key technologies like GSM-R, TETRA, DECT, will foster the exchange of knowhow across all areas and breed innovation. The centralization of labor, development, reporting and IT will further create synergies. The company will consequently outsource standard tasks and perform permanent optimization in order to reach a high level of assembly efficiency. A next step will be the outsourcing of the production of standard components to suppliers.

The distribution strategy is focused on internationalization via partnerships. The company will present the full product spectrum of all its business units when approaching new markets and partners. Funkwerk AG plans to position itself increasingly as a solution-oriented system provider.

### 3.2 Group Results

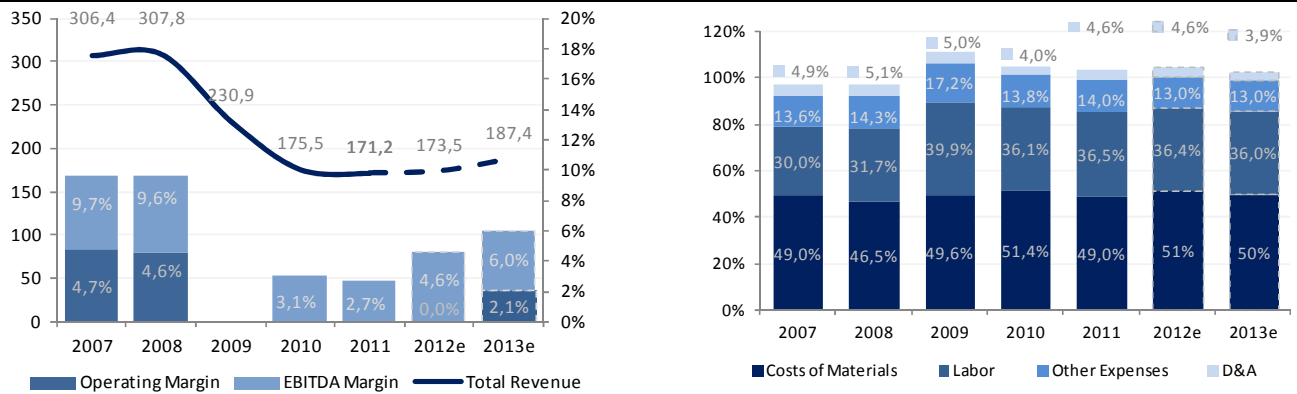
Sales in 2011 came in below our expectation and company guidance. The company stated that the market for communication and information systems remained difficult mainly due to contract delays and longer project periods in the public sector. Also investments by Deutsche Bahn came in below management's expectations. EBIT before non-operating charges came in at €-3.2m

Group Results (in €m)	Company Results			Our Estimate		Company Guidance	
	2010	2011	Δ (%)	2011	Δ (%)	2011	Δ (%)
Sales (adjusted)	168,6	164,6	(2,4)	167,2	(1,6)	170,0	(3,2)
EBIT (adjusted)	(1,7)	(3,2)	(88,2)	(1,8)	(75,8)	small loss	
EBIT	(14,9)	(13,1)	12,1	--	--	--	--

Labor costs share on total revenues remained stable, as many of the employees leaving were from the low-wage sector, while at the same time overall wage levels increased. A number of 285 employees left the company in the context of restructuring and 70 employees were laid off in order to tighten labor activities.

Costs of material dropped stronger than revenues due to apparently a high share of material costs of sold TCC unit and the unleashing of synergies by centralizing purchasing efforts. These factors even offset an input price increase triggered by the earthquake in Japan which is one of Funkwerk supply markets.

## Group Results and Estimates



Absolute numbers in €m, Margins relative to total revenues; Values adjusted for non-recurring items

Source: Funkwerk AG, Dr. Kalliwoda Research © 2012

The financial loss increased, due to costs connected to the issuance of debt capital. In March 2011 Funkwerk concluded a syndicate loan agreement. As the reorganization became evident the terms of the agreements were renegotiated. The overall size of the loan was lowered to a €10m money market loan and €40m in guaranteed credit lines. The terms of the agreement were relaxed. The state guarantees were dropped, the proceeds from the sold business units are now at free disposal for the company and stockholders are free to decide on a dividend. The exact terms of the agreement are to be negotiated and as of such the exact covenants are not yet known.

Provisions for taxes included a reserve for a higher than expected tax repayment, which the company appealed against. The adjusted net loss amounted to €-8.3m versus €-16.5m in the prior year. Accordingly adjusted EPS improved from €-2.0 to €-1.0 as the number of shares outstanding remained unchanged.

As a result of the income loss cash from operations were negative. Cash from investing activities evened out as proceeds from the business sales offset investments, such as the new developed product platform in the segment AC. The financing cash flow increased by the amount of the new short term money market loan. The liquidity cushion improved to €18m.

### 3.3 Segments

The largest of all segments is TCC and is also the one with the most successful performance in 2011. Revenues for the TCC segment adjusted for the undergone and planned unit increased slightly from €83.6m to €86m. EBIT before charges increased from €3.6m to €4.5m. Funkwerk succeeded in the segment TCC with substantial new orders from DB, international market entries and new product developments and placements in 2011. Especially the division passenger information performed very well.

Segment Results (in €m)	TCC			SC			AC		
	2010	2011	Δ (%)	2010	2011	Δ (%)	2010	2011	Δ (%)
Sales (adjusted)	83,6	86,5	3,5	57,4	55,5	(3,3)	27,6	22,6	(18,1)
EBIT (adjusted)	3,6	4,5	25,0	(3,9)	(4,5)	(15,4)	(1,1)	(2,7)	(145,5)
EBIT	1,1	0,4	(63,6)	(13,7)	(6,2)	54,7	(2,1)	(6,9)	(228,6)

In the segment SC sales decreased slightly. One reason is its high dependence on public spending. Despite substantial restructuring measures, the unadjusted EBIT increased considerable due to large one-time charges resulting from the Algerian operation in the prior year.

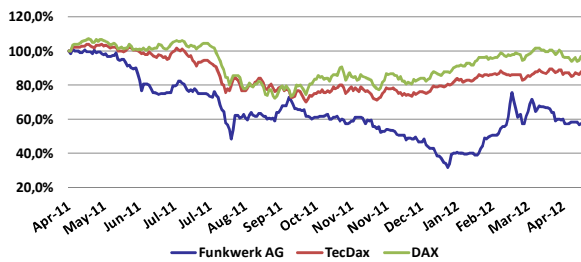
Mainly because of the result of the planned unit sale within the **segment AC** revenues decreased by 18%. Framework orders for new product developments triggered the need for the investment in a new product platform. The connected upfront payments lead to a negative operating result of €-2.7m before impairment and restructuring charges.

Concluding from the below product development table Funkwerk AG managed to build substantial order backlog in 2011 where first revenue flows will come already in 2012. Within the next year several geographic market entries and new product placements are in the pipeline.

CURRENT SEGMENT DEVELOPMENT OVERVIEW				
TCC		SC		AC
Infrastructure	Rolling Stock	Video Security Solutions	Security	Automotive
<b>2011 Product Development and Orders</b>				
<ul style="list-style-type: none"> <li>DB follow-up order from for Allister SLI 4 in Bremen start 2013</li> <li>Orders for Allister SLI2 from five European countries</li> <li>DB Order of software migration of the eight operating centers to a new hardware platform in 09/2012 (PRISMA)</li> <li>DB order to provide control systems with modern interfaces</li> </ul>	<ul style="list-style-type: none"> <li>Market entry of focX handhelds with an order of 2000# of ÖBB until 2016, 1<sup>st</sup> # Q1/2011</li> <li>First GSM-R orders from India (180#, 5y + after sale service), Turkey, Latvia</li> <li>DB order to upgrade audio information system at 50% main-line stations in GER</li> <li>Delivery of a 148 RIU ETCS train safety systems to Siemens</li> </ul>	<ul style="list-style-type: none"> <li>Argoscan software with camera solution order for highway hard shoulder lane release</li> <li>Large order from european central bank for full video surveillance system</li> <li>Expansion of existing order from Nürnberg for wireless LAN camera solution system enabling driverless operation of underground lines and surveillance</li> </ul>	<ul style="list-style-type: none"> <li>Power plant of RWE with personal emergency call system</li> <li>D4 Office handheld launch with telephony and messaging for all DECT networks</li> <li>ATEX certification for highest class of TETRA handhelds, new orders of explosion-proof device by French energy supplier and Norway oil platform</li> <li>Over 75% of personal emergency call systems tenders won</li> </ul>	<ul style="list-style-type: none"> <li>Three new Orders for new product development amounting to €100m. 1) mobile integration units for car manufacturer 2) telematic devices for a lorry manufacturer 3) coupling chamber for car manufacturer to optimize mobile phone reception</li> <li>Large Order from Telematik DeTeFleet: 6000 cars fore fleet management</li> <li>Innovation in Audi A3 antenna coupling</li> </ul>
<b>2011 Strategic Measures</b>				
<ul style="list-style-type: none"> <li>Focus on train and railway business</li> <li>Sale of Alpha Meß-Steuer-Regeltechnik GmbH</li> <li>Lean management production</li> </ul>		<ul style="list-style-type: none"> <li>Restructuring measures in centralizing production (e.g. Cameras: closing Fürth moving it to Salzgitter), lean management, and purchasing</li> <li>17 new international partners added</li> </ul>		<ul style="list-style-type: none"> <li>Abandoning of aftersales-devision</li> <li>Reducing unit costs, optimizing inventory</li> </ul>
<b>Company Guidance</b>				
<ul style="list-style-type: none"> <li>Accreditation of Allister SIL2 in 2012</li> <li>New orders for Allister SIL2 &amp; SIL4</li> </ul>	<ul style="list-style-type: none"> <li>roll-out in Australia, France</li> <li>Market entry in US with "clean cab radio" in 2013</li> <li>Follow up orders from train manufacturers</li> <li>Sale of Funkwerk Information Technologies Karlsfeld GmbH</li> </ul>	<ul style="list-style-type: none"> <li>Market entry of FAC960 (analog camera), VNS (LAN Transmission), OptiSave (video management system for small &amp; mid-sized corporations), FAC 4000 IP into HD market</li> <li>Expansion of service and consulting business</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of DECT OEM-business</li> <li>Placement of D4 Office</li> <li>Completion and market entry of Dect-over-IP-System</li> <li>Assertion of market dominance in penal facilities</li> </ul>	<ul style="list-style-type: none"> <li>Compensor for various manufacturers</li> <li>Development of products for new orders (end 2013) and winning more manufacturers for these</li> <li>Sale of Funkwerk Avionics GmbH</li> </ul>

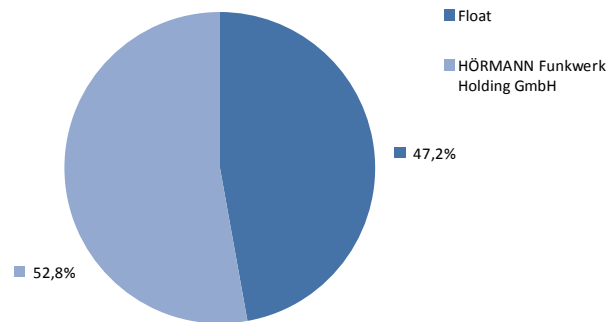
## 4 Stock

### Stock Price Performance



Source: ThomsonReutersKnowledge, Dr. Kalliwoda Research

### Shareholder Structure



Source: Funkwerk AG

## 5 Conclusion

Funkwerk positioned itself in growth segments in areas of its core competencies where it enjoys a technology and market lead. The centralization of business activities will lead to greater efficiency. We view the EU wide modernization of railways, the megatrend of inside car usage of smart consumer electronics, as well as the company's international expansion as the greatest value drivers for Funkwerk. In the short term the reorganization and international expansion resembles a challenge. In the medium term we expect Funkwerk to attain higher revenue growth and margins.

We lowered our outlook for the upcoming year mainly accounting for reorganization in line with management expectations.

Estimate & Guidance (in €m)	Our Estimate		Company Guidance	Our Estimate		Company Guidance
	Old 2012	New 2012	2012	Old 2013	New 2013	2013
Sales	219,8	166,21	2011 level	227,5	179,51	high single digit growth
EBIT	0,6	0,02	0	1,5	3,90	positive

As a result of the change in our estimates our DCF target price lowered to €4.52. Our peer group analysis leads to a fair value of €6.46. We give the DCF valuation a weight of 90% and the peer group valuation a weight of 10%. This leads to a final target price of €4.71. Applying our rating methodology and comparing the target price to the current stock price, leads to the recommendation "BUY".

## 6 Financial Statements

### 6.1 Profit and Loss Statement

#### Profit & Loss Statement

Figures in mio. €	Fiscal Year										
	2007	2008	2009	2010	2011	2012e	2013e	2014e	2015e	2016e	2017e
<b>Revenues</b>	<b>291</b>	<b>290</b>	<b>218</b>	<b>169</b>	<b>165</b>	<b>166</b>	<b>180</b>	<b>194</b>	<b>207</b>	<b>220</b>	<b>231</b>
Other Revenue	16	18	12	7	7	7	8	9	9	10	10
<b>Total Revenue</b>	<b>306</b>	<b>308</b>	<b>231</b>	<b>175</b>	<b>171</b>	<b>174</b>	<b>187</b>	<b>202</b>	<b>217</b>	<b>230</b>	<b>241</b>
Costs of Revenue	(143)	(137)	(102)	(82)	(80)	(80)	(84)	(89)	(95)	(101)	(106)
Labor Costs	(92)	(98)	(92)	(63)	(62)	(63)	(68)	(70)	(73)	(75)	(77)
Other Operating Expenses	(42)	(45)	(68)	(38)	(34)	(23)	(24)	(26)	(28)	(30)	(31)
Depreciation and Amortization	(15)	(16)	(11)	(7)	(8)	(8)	(7)	(8)	(8)	(9)	(10)
<b>Operating Income</b>	<b>14</b>	<b>13</b>	<b>(43)</b>	<b>(15)</b>	<b>(13)</b>	<b>0</b>	<b>4</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>17</b>
Financial Profit / Loss	(2)	(2)	(2)	(2)	(2)	(0)	(1)	(1)	(1)	(1)	(1)
<b>Earnings Before Taxes</b>	<b>12</b>	<b>11</b>	<b>(45)</b>	<b>(17)</b>	<b>(15)</b>	<b>(0)</b>	<b>3</b>	<b>8</b>	<b>11</b>	<b>14</b>	<b>17</b>
Provisions for Income Tax	(7)	(3)	4	(6)	(4)	0	(1)	(2)	(3)	(4)	(5)
<b>Net Income After Taxes</b>	<b>6</b>	<b>8</b>	<b>(41)</b>	<b>(23)</b>	<b>(19)</b>	<b>(0)</b>	<b>2</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>12</b>
Minority Interest	1	0	(0)	0	0	0	0	0	0	0	0
Extraordinary Items and Adjustments	0	0	0	(2)	3	0	0	0	0	0	0
<b>Net Income</b>	<b>6</b>	<b>8</b>	<b>(41)</b>	<b>(25)</b>	<b>(16)</b>	<b>(0)</b>	<b>2</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>12</b>

#### Profit & Loss (Growth Rate YoY)

<b>Revenues</b>	<b>20%</b>	<b>(0%)</b>	<b>(25%)</b>	<b>(23%)</b>	<b>(2%)</b>	<b>1%</b>	<b>8%</b>	<b>8%</b>	<b>7%</b>	<b>6%</b>	<b>5%</b>
Other Revenue	128%	12%	(29%)	(45%)	(3%)	10%	8%	8%	7%	6%	5%
<b>Total Revenue</b>	<b>23%</b>	<b>0%</b>	<b>(25%)</b>	<b>(24%)</b>	<b>(2%)</b>	<b>1%</b>	<b>8%</b>	<b>8%</b>	<b>7%</b>	<b>6%</b>	<b>5%</b>
Costs of Revenue	16%	(5%)	(26%)	(19%)	(3%)	(0%)	6%	6%	7%	6%	5%
Labor Costs	29%	6%	(5%)	(31%)	(1%)	1%	7%	4%	3%	3%	2%
Other Operating Expenses	36%	8%	53%	(45%)	(10%)	(34%)	8%	8%	7%	6%	5%
Depreciation and Amortization	20%	3%	(27%)	(38%)	11%	3%	(9%)	8%	8%	7%	6%
<b>Operating Income</b>	<b>43%</b>	<b>(8%)</b>	<b>n.m.</b>	<b>(65%)</b>	<b>(12%)</b>	<b>n.m.</b>	<b>n.m.</b>	<b>129%</b>	<b>34%</b>	<b>24%</b>	<b>17%</b>
Financial Profit / Loss	576%	(1%)	14%	(24%)	33%	(78%)	74%	(22%)	0%	(6%)	(9%)
<b>Earnings Before Taxes</b>	<b>27%</b>	<b>(10%)</b>	<b>n.m.</b>	<b>(63%)</b>	<b>(8%)</b>	<b>(97%)</b>	<b>n.m.</b>	<b>170%</b>	<b>36%</b>	<b>25%</b>	<b>18%</b>
Provisions for Income Tax	138%	(50%)	n.m.	n.m.	(41%)	n.m.	n.m.	170%	36%	25%	18%
<b>Net Income After Taxes</b>	<b>(17%)</b>	<b>36%</b>	<b>n.m.</b>	<b>(44%)</b>	<b>(17%)</b>	<b>(98%)</b>	<b>n.m.</b>	<b>170%</b>	<b>36%</b>	<b>25%</b>	<b>18%</b>
Minority Interest	n.m.	(64%)	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Extraordinary Items and Adjustments	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
<b>Net Income</b>	<b>(6%)</b>	<b>27%</b>	<b>n.m.</b>	<b>(39%)</b>	<b>(36%)</b>	<b>(97%)</b>	<b>n.m.</b>	<b>170%</b>	<b>36%</b>	<b>25%</b>	<b>18%</b>

#### Profit & Loss (% of Total Revenues)

<b>Revenues</b>	<b>95%</b>	<b>94%</b>	<b>95%</b>	<b>96%</b>	<b>96%</b>	<b>96%</b>	<b>96%</b>	<b>96%</b>	<b>96%</b>	<b>96%</b>	<b>96%</b>
Other Revenue	5%	6%	5%	4%	4%	4%	4%	4%	4%	4%	4%
<b>Total Revenue</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
Costs of Revenue	(47%)	(44%)	(44%)	(47%)	(47%)	(46%)	(45%)	(44%)	(44%)	(44%)	(44%)
Labor Costs	(30%)	(32%)	(40%)	(36%)	(36%)	(36%)	(36%)	(35%)	(34%)	(33%)	(32%)
Other Operating Expenses	(14%)	(15%)	(30%)	(21%)	(20%)	(13%)	(13%)	(13%)	(13%)	(13%)	(13%)
Depreciation and Amortization	(5%)	(5%)	(5%)	(4%)	(5%)	(5%)	(4%)	(4%)	(4%)	(4%)	(4%)
<b>Operating Income</b>	<b>5%</b>	<b>4%</b>	<b>(19%)</b>	<b>(9%)</b>	<b>(8%)</b>	<b>0%</b>	<b>2%</b>	<b>4%</b>	<b>6%</b>	<b>6%</b>	<b>7%</b>
Financial Profit / Loss	(1%)	(1%)	(1%)	(1%)	(1%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)
<b>Earnings Before Taxes</b>	<b>4%</b>	<b>4%</b>	<b>(19%)</b>	<b>(9%)</b>	<b>(9%)</b>	<b>(0%)</b>	<b>2%</b>	<b>4%</b>	<b>5%</b>	<b>6%</b>	<b>7%</b>
Provisions for Income Tax	(2%)	(1%)	2%	(3%)	(2%)	0%	(0%)	(1%)	(2%)	(2%)	(2%)
<b>Net Income After Taxes</b>	<b>2%</b>	<b>3%</b>	<b>(18%)</b>	<b>(13%)</b>	<b>(11%)</b>	<b>(0%)</b>	<b>1%</b>	<b>3%</b>	<b>4%</b>	<b>4%</b>	<b>5%</b>
Minority Interest	0%	0%	(0%)	0%	0%	0%	0%	0%	0%	0%	0%
Extraordinary Items and Adjustments	0%	0%	0%	(1%)	2%	0%	0%	0%	0%	0%	0%
<b>Net Income</b>	<b>2%</b>	<b>3%</b>	<b>(18%)</b>	<b>(14%)</b>	<b>(9%)</b>	<b>(0%)</b>	<b>1%</b>	<b>3%</b>	<b>4%</b>	<b>4%</b>	<b>5%</b>

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## 6.2 Balance Sheet

### Balance Sheet

Figures in mio. €	Fiscal Year											
	2007	2008	2009	2010	2011	2012e	2013e	2014e	2015e	2016e	2017e	
<b>Assets</b>												
<u>Current assets</u>												
<i>Cash and Cash Equivalents</i>	18	25	22	12	17	22	19	21	24	30	38	
<i>Short Term Investments</i>	1	1	1	4	12	9	9	9	9	9	9	
<i>Receivables</i>	75	74	44	36	39	32	34	37	40	42	44	
<i>Inventory</i>	52	46	43	44	36	29	31	33	35	37	39	
<i>Prepaid Expenses</i>	0	2	1	1	0	1	1	1	1	1	1	
<i>Other Current Assets</i>	5	4	3	4	17	3	3	3	3	3	4	
<b>Sum current assets</b>	<b>150</b>	<b>153</b>	<b>114</b>	<b>100</b>	<b>121</b>	<b>95</b>	<b>97</b>	<b>103</b>	<b>112</b>	<b>122</b>	<b>135</b>	
<u>Non-current assets</u>												
<i>Property, Plant and Equipment</i>	19	19	17	14	12	8	8	9	10	10	11	
<i>Intangible Assets</i>	46	28	23	26	19	21	23	25	27	28	30	
<i>Goodwill</i>	0	19	10	9	5	5	5	5	5	5	5	
<i>Long Term Investments</i>	0	0	2	0	0	0	0	0	0	0	0	
<i>Deferred Income Taxes</i>	13	0	2	0	0	0	0	0	0	0	0	
<i>Other Long Term Assets</i>	0	0	0	0	0	0	0	0	0	0	0	
<b>Sum Non-Current Assets</b>	<b>77</b>	<b>67</b>	<b>54</b>	<b>50</b>	<b>37</b>	<b>35</b>	<b>37</b>	<b>39</b>	<b>42</b>	<b>44</b>	<b>46</b>	
<b>Total Assets</b>	<b>227</b>	<b>220</b>	<b>168</b>	<b>150</b>	<b>158</b>	<b>130</b>	<b>133</b>	<b>142</b>	<b>153</b>	<b>166</b>	<b>180</b>	
<b>Equity and Liabilities</b>												
<u>Current Liabilities</u>												
<i>Accounts Payable</i>	29	34	23	29	28	24	28	30	32	34	35	
<i>Accruals</i>	19	20	22	26	21	21	22	23	24	24	25	
<i>Short Term Debt</i>	2	0	2	0	13	19	13	13	13	13	13	
<i>Other Current Liabilities</i>	27	19	17	15	33	3	3	3	3	4	4	
<b>Sum Current Liabilities</b>	<b>77</b>	<b>74</b>	<b>65</b>	<b>71</b>	<b>95</b>	<b>66</b>	<b>66</b>	<b>69</b>	<b>72</b>	<b>75</b>	<b>77</b>	
<u>Non-Current Liabilities</u>												
<i>Non-Current Loans</i>	0	0	0	0	0	0	2	2	2	2	2	
<i>Deferred Tax Liabilities</i>	15	3	0	1	1	1	1	1	1	1	1	
<i>Other Non-Current Liabilities</i>	12	14	14	13	13	14	14	14	14	14	14	
<b>Sum Non-Current Liabilities</b>	<b>27</b>	<b>17</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	
<u>Shareholders' Equity</u>												
<i>Subscribed Capital</i>	71	71	71	72	72	72	72	72	72	72	72	
<i>Retained earnings</i>	53	59	18	-7	-23	-23	-21	-15	-7	3	14	
<i>Other Equity</i>	0	0	0	0	0	0	0	0	0	0	0	
<b>Sum Equity</b>	<b>123</b>	<b>130</b>	<b>89</b>	<b>64</b>	<b>49</b>	<b>48</b>	<b>51</b>	<b>56</b>	<b>64</b>	<b>74</b>	<b>86</b>	
<b>Total Equity and Liabilities</b>	<b>227</b>	<b>220</b>	<b>168</b>	<b>150</b>	<b>158</b>	<b>129</b>	<b>133</b>	<b>142</b>	<b>153</b>	<b>166</b>	<b>180</b>	

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## 6.3 Cash Flow Statement

### Cash Flow Statement

Figures in mio. €	Fiscal Year										
	2007	2008	2009	2010	2011	2012e	2013e	2014e	2015e	2016e	2017e
<b>1. Cash from Operating Activities</b>											
<i>Net Profit before Tax</i>	12	11	(45)	(17)	(15)	(0)	3	8	11	14	17
<i>Amortization and Depreciation</i>	15	16	22	11	13	8	7	8	8	9	10
<i>Non-cash Items</i>	(2)	(0)	8	17	(3)	0	0	0	0	0	0
<i>Change in Working Capital</i>	(15)	(0)	22	(7)	(1)	(10)	1	(4)	(5)	(6)	(6)
<b>Cash from Operating Activities</b>	<b>15</b>	<b>26</b>	<b>7</b>	<b>4</b>	<b>(6)</b>	<b>(2)</b>	<b>12</b>	<b>12</b>	<b>15</b>	<b>18</b>	<b>20</b>
<b>2. Cash from Investment Activities</b>											
<i>Capital Expenditures</i>	(20)	(20)	(15)	(12)	(11)	(10)	(10)	(10)	(11)	(11)	(12)
<i>Other Investing Cash Flow/Items</i>	(9)	5	2	(1)	11	11	0	0	0	0	0
<b>Cash from Investment Activities</b>	<b>(30)</b>	<b>(15)</b>	<b>(12)</b>	<b>(13)</b>	<b>(1)</b>	<b>1</b>	<b>(10)</b>	<b>(10)</b>	<b>(11)</b>	<b>(11)</b>	<b>(12)</b>
<b>3. Cash from Financing Activities</b>											
<i>Financing Cash Flow/Items</i>	0	(0)	0	0	0	(0)	(1)	(1)	(1)	(1)	(1)
<i>Dividends Paid Out</i>	(3)	(2)	0	0	0	0	0	0	0	0	0
<i>Issuance (Retirement) of Stock</i>	--	--	--	0	0	0	0	0	0	0	0
<i>Issuance (Retirement) of Debt</i>	2	(2)	2	(2)	12	6	(4)	0	0	0	0
<b>Cash from Financing Activities</b>	<b>(1)</b>	<b>(4)</b>	<b>2</b>	<b>(2)</b>	<b>12</b>	<b>6</b>	<b>(5)</b>	<b>(0)</b>	<b>(1)</b>	<b>(1)</b>	<b>(1)</b>
<b>4. Cash at End of Period</b>											
<i>Foreign Exchange Effects</i>	0	0	0	0	0	0	0	0	0	0	0
<b>Changes in Cash</b>	<b>(16)</b>	<b>8</b>	<b>(3)</b>	<b>(10)</b>	<b>6</b>	<b>5</b>	<b>(3)</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>
<i>Cash at Beginning of Period</i>	34	18	25	22	12	18	23	20	21	25	31
<b>Cash at End of Period</b>	<b>18</b>	<b>25</b>	<b>22</b>	<b>12</b>	<b>18</b>	<b>23</b>	<b>20</b>	<b>21</b>	<b>25</b>	<b>31</b>	<b>39</b>

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## 7 Valuation

### 7.1 DCF-Model

In order to determine the fair value, we established a three-stage discounted cash flow model and used market data for peer group companies. All data are based on the consolidated financial statements. Through discounting operative free cash flows to the valuation date we accommodated the during the period valuation date. As far as non-operating assets are concerned, their value was derived separately and added to the present value of payouts. Tying in with this, the phase of terminal value follows, for which we calculated with a growth rate of 2.0% p.a.

#### / Discounted Cash Flow-Modell (Basis 4/2012)

(m EUR)	Phase 1					
	2012e	2013e	2014e	2015e	2016e	2017e
<b>Total Revenues</b>	<b>174</b>	<b>187</b>	<b>202</b>	<b>217</b>	<b>230</b>	<b>241</b>
Rate of change	10%	8%	8%	7%	6%	5%
<b>EBIT</b>	<b>0</b>	<b>4</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>17</b>
Rate of change	-	23059%	129%	34%	24%	17%
Margin	0%	2%	4%	6%	6%	7%
Interest and Shareholding Income	<b>0</b>	<b>-1</b>	<b>-1</b>	<b>-1</b>	<b>-1</b>	<b>-1</b>
<b>EBT</b>	<b>0</b>	<b>3</b>	<b>8</b>	<b>11</b>	<b>14</b>	<b>17</b>
Operational tax expenses	<b>0</b>	<b>-1</b>	<b>-2</b>	<b>-3</b>	<b>-4</b>	<b>-5</b>
Effective Tax Rate (ex. Interest Income)	0%	30%	30%	30%	30%	30%
Depreciation and Amortization	<b>8</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>10</b>
Depreciation Ratio (%Revenues)	5%	4%	4%	4%	4%	4%
Changes in long-term provisions	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Proportion of Revenues	-	-	-	-	-	-
Change in Working Capital	<b>-10</b>	<b>1</b>	<b>-4</b>	<b>-5</b>	<b>-6</b>	<b>-6</b>
Working-Capital-Ratio (%Revenues)	-6%	1%	-2%	-2%	-2%	-3%
Investments into fixed assets	<b>-10</b>	<b>-10</b>	<b>-10</b>	<b>-11</b>	<b>-11</b>	<b>-12</b>
Investments ratio (% Revenues)	-6%	-5%	-5%	-5%	-5%	-5%
Other	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Free Cash-Flow</b>	<b>-12</b>	<b>1</b>	<b>-1</b>	<b>1</b>	<b>2</b>	<b>4</b>

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## 7.2 WACC

The discount rate was calculated by deriving the weighted average cost of capital. We assume that the target capital structure will not change in the subsequent business years.

### WACC Assumptions

#### Growth Propositions

Long-Term growth rate / Inflation Assimilation Phase (from 2015)	2,0%
Revenue growth in the beginning	5 Jahre
Margin development (p.a.)	5,0% +1 BP

#### Equity Cost

Long-Term risk-free rate	4,5%
Market Risk Premium	6,0%
Beta of the Company	1,20
<b>Equity Cost</b>	<b>11,7%</b>

#### Debt Cost

Debt Cost (before tax)	8,0%
Tax rate on Debt interest	30,0%
<b>Debt Cost (after tax)</b>	<b>5,6%</b>

Equity Value	32
Market Value of Debt	13
Gearing (Market Values)	40,1%
<b>WACC</b>	<b>9,96%</b>

Adjustments for debt to current interest were not made. Risk free profitability is based on the average profitability of the 30-year Treasury bond.

Figuring a risk prime follows the capital asset pricing model (CAPM) and covers in particular the systemic risks (market risk prime esp. company specific risk). The beta value we used to identify the company specific risk is based on the performance of the reference index DAX.

## 7.3 Fair Value – Sensitivities

The modification of the action parameter in terminal value is shown below in the sensitivity analysis. It shows variance in our derived fair value in variant scenarios.

Sensitivity analysis		Fair value per share				
(EUR)		Discount rate				
$\beta = 1,2$		9,46%	9,71%	9,96%	10,21%	10,46%
Groth	1,0%	4,62	4,48	4,34	4,21	4,09
	1,5%	4,72	4,57	4,42	4,29	4,16
	2,0%	4,84	4,67	<b>4,52</b>	4,37	4,24
	2,5%	4,97	4,79	4,62	4,47	4,32
	3,0%	5,12	4,92	4,75	4,58	4,42

Sensitivity analysis		Market capitalization				
(EUR m)		Discount rate				
$\beta = 1,2$		9,46%	9,71%	9,96%	10,21%	10,46%
Groth	1,0%	37	36	35	34	33
	1,5%	38	37	36	35	34
	2,0%	39	38	<b>36</b>	35	34
	2,5%	40	39	37	36	35
	3,0%	41	40	38	37	36

## 7.4 Peer Group Analysis

We have additionally subjected the valuation of the company resulting from our DCF model to a plausibility check by means of a peer group analysis. The application of a relative valuation model is based on the concept that comparable companies possess corresponding market values. Accordingly, primarily stock exchange listed companies are selected, which supply similar products or which have an equivalent business model. An analysis of the key financial figures of all companies delivers an estimate as to in how far the valuation result for the company can be traced back to lower comparability with its peer group or specifically to an under- or overvaluation.

The initial data of the comparison companies originates from the information service provider Thomson Reuters. The future-oriented financial data of the comparison companies represents the median value of all analysts' estimates that are available for the product at ThomsonReutersKnowledge. The market value of financial liabilities is estimated in the book value for all companies.

Peer Group Multiples											
Peers	EV / Sales			EV / EBITDA			EV / EBIT		Price / Bvps		
	2012	2013	2014	2012	2013	2014	2013	2014	2012	2013	2014
Adva Optical Networking AG	0,8	0,7	0,7	8,3	6,7	5,5	10	9	1,3	1,1	1,3
Ascom Holding AG	0,6	0,6	0,6	5,0	4,9	4,3	6	5	1,4	1,3	1,2
Euromicron AG Communication & Control Tech	0,8	0,7	0,7	8,8	7,7	6,4	8	7	1,0	1,0	0,9
Init Innovation in Traffic Systems AG	2,2	2,0	1,9	11,3	9,0	8,1	10	10	2,4	n.a.	n.a.
Intica Systems AG	0,8	0,7	0,6	5,7	4,7	3,6	10	n.a.	n.a.	n.a.	n.a.
Kapsch Trafficcom AG	2,3	1,8	1,7	20,6	17,5	10,1	12	11	3,5	2,9	2,4
Please enter RIC	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<b>Funkwerk AG</b>	<b>0,2</b>	<b>0,2</b>	<b>0,1</b>	<b>3,5</b>	<b>2,5</b>	<b>1,7</b>	<b>7,3</b>	<b>3,2</b>	<b>0,7</b>	<b>0,6</b>	<b>0,6</b>
Median	0,8	0,7	0,6	7,5	6,4	5,5	8,9	7,5	1,4	1,2	1,2
Mean	1,0	0,9	0,8	8,7	7,4	5,7	8,8	7,5	1,8	1,5	1,3
<b>Peer Benchmark</b>	<b>1,0</b>	<b>0,9</b>	<b>0,8</b>	<b>7,5</b>	<b>9,1</b>	<b>8,0</b>	<b>8,9</b>	<b>13,1</b>	<b>1,1</b>	<b>0,8</b>	<b>0,8</b>
Discount (-)/Premium (+) in %	-84	-84	-83	-53	-72	-79	-18	-76	-37	-25	-27
Valuation											
<b>Peer Benchmark</b>	<b>1,0</b>	<b>0,9</b>	<b>0,8</b>	<b>7,5</b>	<b>9,1</b>	<b>8,0</b>	<b>8,9</b>	<b>13,1</b>	<b>1,1</b>	<b>0,8</b>	<b>0,8</b>
Funkwerk AG financials	174	187	202	8	11	17	4	9	6,0	6,3	7,0
Implied Enterprise Value	180	177	171	60	101	135	35	117			
+ Cash and Cash Equivalents	29	29	29	29	29	29	29	29			
- Financial Debt	13	13	13	13	13	13	13	13			
- Pension Liabilities	13	13	13	13	13	13	13	13			
- Minority Interest	0	0	0	0	0	0	0	0			
- Preferred Equity	0	0	0	0	0	0	0	0			
+ Change in Equity Capital	0	0	0	0	0	0	0	0			
Implied Equity Value	184	181	175	64	105	139	39	121			
Number of Shares	8	8	8	8	8	8	8	8			
<b>Implied fair value per share</b>	<b>22,8</b>	<b>22,5</b>	<b>21,7</b>	<b>7,9</b>	<b>13,0</b>	<b>17,3</b>	<b>4,8</b>	<b>15,0</b>	<b>6,4</b>	<b>5,3</b>	<b>5,5</b>
Weights	13%	13%	13%	13%	13%	13%	13%	13%	33%	33%	33%
<b>Results</b>	<b>15,63</b>								<b>5,72</b>		
Weights	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
<b>Fair Value Implied by Both Peer Multiples:</b>							<b>12,93 EUR</b>				
<b>Premium (Discount) to Peer Benchmark: -50 %</b>											
<b>Fair Value per Share 6,46 EUR</b>											

Source: ThomsonReutersKnowledge, Dr. Kalliwoda | Research 2012

Our peer model concludes a price of €12.93 per share. However relative to its peers, Funkwerk faces restructuring risk. For this reason we applied a discount to its peer group of 50%. This leads to a fair value of €646.

## 8 Contact

Funkwerk AG

Im Funkwerk 5  
D-99625 Kölleda/Thüringen

Phone: + 49 (0) 3635 – 600 - 346  
Telefax: + 49 (0) 3635 – 600 - 507  
Head of IR: Jörg Reichenbach  
E-Mail: ir@funkwerk.de

<b>DR. KALLIWODA</b> <b>RESEARCH GmbH</b> Primary Research   Fair Value Analysis   International Roadshows		Rüterstraße 4a 60325 Frankfurt Tel.: 069-97 20 58 53 www.kalliwoda.com
<b>Head:</b> <b>Dr. Norbert Kalliwoda</b> E-Mail: nk@kalliwoda.com	CEFA-Analyst; University of Frankfurt/Main; PhD in Economics; Dipl.-Kfm.	<u>Sectors:</u> IT, Software, Electricals & Electronics, Mechanical Engineering, Logistics, Laser, Technology, Raw Materials
<b>Sven Bedbur</b> E-Mail: sb@kalliwoda.com	Dipl.-Kfm. Analyst; University of Frankfurt/Main	<u>Sectors:</u> IT Services & Software, Financial Services, Mining & Exploration
<b>Michael John</b> E-Mail: mj@kalliwoda.com	Dipl.-Ing. (Aachen)	<u>Sectors:</u> Chemicals, Chemical Engineering, Basic Metals, Renewable Energies, Laser/Physics
<b>Dr. Thomas Krassmann</b> E-Mail: tk@kalliwoda.com	Dipl.-Geologist, M.Sc.; University of Göttingen & Rhodes University, South Africa;	<u>Sectors:</u> Raw Materials, Mining, Precious Metals, Gem stones.
<b>Maximilian F. Kaessens</b> E-Mail: mk@kalliwoda.com	Bachelor of Science in Business Administration (Babson College (05/2012), Babson Park, MA (US))	<u>Sectors:</u> Financials, Real Estate
<b>Dr. Christoph Piechaczek</b> E-Mail: cp@kalliwoda.com	Dipl.-Biologist; Technical University Darmstadt; Univ. Witten-Herdecke.	<u>Sectors:</u> Biotech & Healthcare; Medical Technology Pharmaceutical
<b>Dr. Erik Schneider</b> E-Mail: es@kalliwoda.com	Dipl.-Biologist; Technical University Darmstadt; Univ. Hamburg.	<u>Sectors:</u> Biotech & Healthcare; Medical Technology Pharmaceutical
<b>David Schreindorfer</b> E-Mail: ds@kalliwoda.com	MBA, Economic Investment Management; Univ. Frankfurt/Univ. Iowa (US).	<u>Sectors:</u> IT/Logistics; Quantitative Modelling
<b>Hellmut Schaarschmidt;</b> E-Mail: hs@kalliwoda.com	Dipl.-Geophysicists; University of Frankfurt/Main.	<u>Sectors:</u> Oil, Regenerative Energies, Specialities Chemicals, Utilities
<b>Robin-Andreas Braun</b> E-Mail: rab@kalliwoda.com	Junior-Analyst; University of Frankfurt/Main (2012)	<u>Sectors:</u> Support Research and Quantitative Approach
<b>Patrick Bellmann</b> E-Mail: pb@kalliwoda.com	Junior-Analyst; WHU - Otto Beisheim School of Management, Vallendar (2012)	<u>Sectors:</u> Support Research and Quantitative Approach
<b>Nele Rave</b> E-Mail: nr@kalliwoda.com	Lawyer; Native Speaker, German School London,	<u>Translations English</u>

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Analyst of this research:  
Dr. Norbert Kalliwoda, CEFA



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