



**Future-Proof Your HFC Network**  
**How to Power the Dynamic Loads of Tomorrow**  
by Rick Marcotte and George Oughton

The business opportunities in the traditional cable television (CATV) markets are growing rapidly as witnessed by the accelerated rate of cable plant construction and upgrades. The trend is expected to continue well into the next decade, and will help multiple system operators (MSO) forge into new services, get closer to the customer and be better equipped to meet the ever increasing demands of subscribers. These new services delivered over the hybrid fiber coaxial (HFC) network such as local telephone, high speed data, energy management and interactive TV are taking place so quickly it's almost becoming a case of "sink or swim." The delivery of these services over the CATV network is seen by a number of industry analysts as fundamental to many MSO's outright survival.

The expansion of information services on the HFC network requires a new breed of active components plus a dramatic increase in overall network reliability. Powering requirements will go beyond the capabilities of traditional CATV powering architectures, creating "unknowns," particularly related to network interface unit-powered devices. Network powered loads such as telephones, energy management interface/controllers, certain cable modems and other yet-to-be-invented devices, will be turning on and off at different times at different points in the network with various power demands. In addition, the existing interaction of constant power coax amplifiers, regardless of the length of the cascade, will increase the dynamic power demands on the network power supplies. The normal service and repair process, where a large part of the load can be switched off, repaired, and switched back on again is another example of a dynamic load on the CATV power supply. These new, and in some cases, unknown dynamic network powering demands will occur in both distributed and centralized power architectures alike. In the absence of knowing what future dynamic loads will be, it's important that MSO's look ahead and plan for them now.