

## ABSTRACT

Globalization caused of 4T (Technology, Telecommunications, Transportation, Tourism) and 4I (Information, Industry, Investment, Individualism) . it is indicated by sophisticating of communication devices. Starting from the use of letters, evolved into a telegraph, telephone, and internet. The internet has increasing the number of users and become an important aspect of life especially for long haul transmission that supported by the use of fiber optics. This condition needs expansion of traffic capacity. The expansion of communication submarine cable system done on BSCS (Batam-Singapore submarine Cable System) I owned by PT.TELIN, which is a gateway for telecommunication of submarine cable system towards international lines. This is done to anticipate and accomodate the demands of traffic and canal capacity up to 2020.

Expansion with DWDM (Dense Wavelength Division Multiplexing) technology is a multiplexing technique of many different wavelengths into a single optical fiber, thus reducing number of the device and efficiency of optical fibers. In this section discussed about the forecasting methods, affecting factor of forecast, correlation between affecting factor of forecast, forecast of traffic and canal capacity based on affecting factor, and wavelength allocation.

The expansion of submarine cable system shows that BSCS I can accommodate the demand of traffic and canal capacity up to 2020 for 62.5825 Gbps or seven canal with DWDM technology. The results obtained from the calculation of average traffic capacity based on IPM and PDRB, it caused of there is a close correlation between IPM and PDRB.

Keywords: BSCS I, DWDM, PT.Telin, IPM, PDRB, *traffic*